# SPELLING PERFORMANCE of THIRD GRADE STUDENTS: A COMPARISON OF WHOLE-LANGUAGE-PLUS-STRATEGY INSTRUCTION, STRATEGY INSTRUCTION ONLY, AND THE WHOLE LANGUAGE APPROACH

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Abstract

This study investigated three methods for teaching children how to spell. Third grade students were divided into three conditions for a one-week training period consisting of 15- to 20-minute lessons. One of the two experimental conditions used a whole language approach along with explicit strategy instruction. The second condition used strategy instruction within a traditional setting. The control used strictly a whole language approach to learning how to spell. The spelling performance of all three conditions improved after the one-week training period. However, students in the strategy instruction groups did significantly better on the study words than the whole language only group. The students in whole-language-plus-strategy instruction outperformed both other groups. Significantly better spelling performance was observed even at the nine-week posttest. This study first supported the hypothesis that children can make significantly greater improvements in their spelling when explicitly taught how to use spelling strategies. Secondly, this study indicated that whole language provided a relevant context for the study words, clearly giving the students in the whole-language-plus-strategy condition an additional advantage.

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# CHAPTER ONE: THE PROBLEM

## Introduction

For some educators and parents, whole language and explicit spelling strategy instruction may be analogous to water and oil. However, they can in fact mix very well. Spelling strategies can be tools that help improve children's spelling in an educational environment that empowers children to write with purpose and encourages further independent authorship. Whole language provides this environment.

One criticism of whole language has been that it does not appear to provide for the development of spelling correctness among other writing skills. On the contrary, whole language advocates regard spelling as an important communication skill which develops naturally and continues to improve as long as meaningful and functional writing experiences are provided frequently. In whole language, the initial inaccuracies which typically exist in the early stages of children's writing are not the focus. This may of course affect the quality of writing in appearance, but not the intended messages, or the enthusiasm of these young would-be authors. As relevant situations arise, children learn that spelling correctness in written communication is necessary for presentation to others. The eventual outcome

is conformity to standardized spelling, with the assistance of their teacher. In addition, the children's enthusiasm has been maintained.

The current study was initiated and developed in response to the accusation that whole language neglects the development of spelling and writing. The study endeavored to show that the use of explicit spelling strategy instruction in a whole language program is an educationally sound approach to learning how to spell. The literature review points out that spelling development is a concern of whole language advocates and that children are encouraged through many genuine opportunities to grow towards the resourceful and consistent use of standardized spelling in whole language environments. Whole language, through integration, gives spelling instruction a meaningful, contextual basis. Further, the literature provides support for the many other benefits of whole language and the effectiveness of explicit spelling strategy instruction, whether it be in a whole language setting or in a traditional setting.

Chapter one explains why whole language and spelling are such controversial issues. It also clarifies the purpose of the study, defines terms, poses the hypotheses, summarizes the chapter, and describes the remainder of the thesis.

Why Look At Whole Language?

For well over twenty years the Ontario Ministry of Education has clearly stated the importance of a child-centered program. The introduction of Education in the Primary and Junior Divisions (1975) states, "program expectations set out in The Formative Years may be achieved in an integrated and child-centered framework" (p. 3). Several criteria are listed to help teachers design programs that focus on the child. For example, teachers may ask the following questions about their own programs to ensure child-centeredness:

> Will it give children an opportunity for direct inquiry, independent study, and creative ability in the context of their own interests, abilities and developmental needs? Will it fulfill their needs to explore and to manipulate? Will it capitalize on the use of all their senses? ... Will it spring from real experiences in the children's environment? Is it relevant to their understanding of the world? Is this content appropriate to each child's level of development? (p. 18)

How can children explore with all their senses and not talk about these experiences? Learning experiences need to be shared during the course of

genuine dialogue in order for children to better connect with and fully understand those experiences. Verbal interaction should be encouraged as it:

> is the most important means of communication. It is an expression of a person's self, and it serves children as a link between themselves and other people. It is, therefore, the school's responsibility to create an atmosphere in which children will be encouraged to express their ideas and feelings and to find new interests and experiences to talk about, and in which they can continue the process begun in infancy - the expansion of sensitivity to sound and pattern, of vocabulary, of language structure, and of speech facility as they articulate their ideas, thoughts, and feelings. (Ontario Ministry of Education, 1975, p. 36)

Children need to manipulate their environment not only to develop oral communication and to enhance their cognitive processes, but to experience self-direction. They need to plan their own learning and respond to the stimulating educational environment expertly created by the teacher so they are motivated to take responsibility for their own learning. In this manner, comprehension, the ability to problem solve, communication skills, and autonomy may be developed. These ideas are outlined by the Ontario Ministry of Education as follows:

> The child also gains language insights through manipulative experiences. ... Diverse shared activities facilitate language expansion. Children need centres where they can handle, discuss and experiment with magnets, balloons, pendulums, magnetic compasses, map-measurers, thermometers, and a variety of associated resource materials. Activities with any of these will provide opportunities for expanding the spoken language and build the foundations of science and mathematics. (1975, p. 30)

"Practice makes perfect," is one traditional saying that makes perfect sense in the whole language philosophy. Fluency, expression, and grammar are more likely to improve if they are modelled by teachers and peers frequently, if they are practised frequently, and if mistakes are corrected immediately through active listening. This is not likely to occur in classrooms where the teacher is the strict authority figure and the students are the quiet, passive sponges absorbing knowledge as it is dispersed and speaking in response to direct questioning.

The needs of our planet and world community are changing quickly and becoming more intense and even tragic. How do traditional authoritarian methods of teaching respond to the world's current concerns? That is, are children adequately prepared to live productively, let alone survive in a world

that no longer can rely on clear cut thinking but more often will demand creative problem solving? Traditional methods teach children how to respond to the expected. Today's children will have much to deal with in the future that is unexpected, as well as expected. Will they be resourceful enough to cope? Using a holistic approach to teach our children today is the first step in preparing individuals to take charge of their precarious future. Whole language, being integrative in nature, supports the movement towards holism.

Child-centredness allows educators to teach in a holistic manner. Children are able to relate new knowledge to their personal prior knowledge and make connections to the world. Educators must certainly be responsible for implementing with understanding the guidelines so wisely set out by the Ontario Ministry of Education and Training if education is truly to be, in many cases, the major means of preparing individuals for responsible living in society.

The whole language philosophy addresses all these needs. It includes child-centred learning in a holistic manner. Goodman, Bird, and Goodman (1991) state:

Whole language is nothing short of a grass-roots revolution in education.

> It brings together the scientific study of learning, of language, of teaching, and of curriculum with the positive, people-centred, historical traditions that sensitive, caring teachers have always upheld. (p. 4)

Teachers began to realize that the whole language approach to learning could be a way of educating children, not just schooling them, that children could learn to be lifelong learners, that they could actually have fun while learning, and that children could benefit socially and emotionally. This seemed a way of helping children to become functional, literate, and responsible members of society. In using the whole language approach, listening and thinking, speaking, writing, and reading skills are developed through a focus on good literature in combination with the children's own language and enriching experiences which stimulate the growth of the whole child.

The long-term effects of whole language have not been measured as yet. An accurate judgement of its overall effect can not be made until a large number of children have truly been instructed by teachers who believe in the whole language philosophy and incorporate those beliefs and practices into their teaching effectively throughout the elementary and high school years.

In the meantime, we are able to look at what can be accomplished from year to year in comparison to other learning environments.

Unfortunately, there may be teachers and parents who, for example, would like to blame children's lack of academic success in the junior grades on the fact that the whole language approach to learning was used in the primary grades. It is much easier to blame current academic weaknesses and failures on past teaching approaches than to question the teaching methods currently employed. Perhaps these few children experience failure in the junior grades because the focus on what they are currently learning and how they are learning is inappropriate, archaic, and/or unrealistic.

Another very realistic consideration is that these children may have actually experienced a great deal of learning in their primary whole language experiences and met their potentials. Moving into a traditional environment which focuses on errors and does not promote problem solving through verbal interaction can certainly change what was once a happy, relevant perception of education into one that is filled with frustration and confusion. Further, too much reliance on numerical grades discourages many students rather than motivates them to learn. Children who probably once enjoyed

and looked forward to going to school may come to dread it. Education and schooling may very well become only schooling (Illich, 1972).

Further, not all children are academically capable of outstanding achievements. Children who suddenly appear to be experiencing difficulty in the junior grades, after immersion in whole language learning throughout their primary years, may very well have done their best. Perhaps these students would have achieved similar outcomes or fewer in a traditional primary approach. Clearly, whole language would more frequently provide the circumstances for children to see themselves as unique and talented.

Some primary children are aware of what they do not know. They can see that other students are academically gifted, but they learn to appreciate their limited achievements as successes anyway, working to improve themselves, not to outperform others. Perhaps the academic performance of these children would be similar regardless of the type of instruction they received in the primary grades simply because they are not capable of doing any better. Naturally, parents believe that their own children are talented. They are quite right. However, some children are naturally more talented than others in a variety of areas. Genetics and the supportive environment in which children are exposed to during those critical, impressionable years

before age five, may possibly determine whether education and schooling are an enlightening experience or a trial. After all, parents are the primary educators of their children. They need to adequately prepare their children, to light the wick of intelligence so that formal education can continue to feed into their intelligence.

A few days of observation in a Junior Kindergarten class are revealing. It is quite clear which children probably come from a home environment that places an emphasis on developing the intelligence. From observations, these children often display excellent memory, comprehension, letter recognition, and reading ability for their age; they are quite articulate and creative at play and when conversing with adults; they easily count with understanding to beyond what is expected, and have an almost second nature knowledge or feeling about time.

There may be other signals that teachers recognize. Whatever the signals may be, teachers in whole language classrooms can focus on the students who were not as privileged in being exposed to those learning activities that stimulate the growth of intelligence during those critical first four years of life. The literature review describes why whole language activity-based learning environments allow teachers to more easily notice, respond to,

and/or remediate (to varying degrees) the needs of all children. This includes those classified as not having had a "head start" to those children who were clearly challenged in a stimulating and enjoyable way by the majority of adults in their lives.

However, regardless of how well parents prepare their children to be learners, the purpose of education is to equitably provide for all children. Whatever their natural academic abilities, they deserve the kind of education that will work on bringing about self-respect first, respect for others, and the resourcefulness, ultimately, to contribute to the development and maintenance of a harmonious society. Do traditional settings inherently and actively promote self-respect, respect for others, resourcefulness, and an understanding of the interconnections of life? The literature review shows that whole language does these things.

Certainly the traditional approach has some positive aspects which may be attributed primarily to the effectiveness of the teachers themselves. There are some successful adults who can attest to this, but there are also some who may have succeeded in spite of the traditional approach. Whole language is a way of educating children for now and for the future. It is a philosophy of education adopted by teachers who genuinely care about improving education

and willingly use their energy, time, and expertise to put the philosophy into practice for their children's sake and for society.

Traditional programs require frequent testing for the purpose of grading and labelling children's efforts for a whole term in the symbolic percentage. The emphasis is on the end result. However, whole language focuses on the processes of learning and the outcomes which develop naturally with the strong support of teachers. Evaluation, therefore, is largely dependent on teacher observation. Testing may have its benefits at times. For example, it may indicate whether or not schools are offering a similar quality of education.

On a whole language report, the children's efforts and accomplishments are celebrated. Learning is regarded as the process that it is. For example, young children can be reported as "developing" in certain areas or as "beginning to develop" and it is quite possible that they have "developed with confidence" in other areas.

Parents, having perhaps grown up in a more competitive educational environment where success was mostly measured by test results, are a little leery of seeing the aforementioned descriptors on report cards. People are uncomfortable with the unfamiliar. For most, the comfort zone is with

grades. The discussion now leads to the major concern. Because the reporting method is questioned, it is inevitable that the program that possibly gave birth to this method of evaluation becomes the focus of criticism.

It is unfair to expect parents who do not possess expertise in the areas of education and schooling to understand and accept not only a strange new way of teaching that does not appear to give explicit literacy instruction, but also a new method of reporting which further alienates them from understanding their children's education.

Whole language advocates need to share their invaluable expertise with parents and those teachers who are either afraid of change or afraid that they may not be capable of changing effectively. To many, a whole language program, particularly one that is activity-based, appears chaotic and noisy, and therefore must be lacking in discipline and skill development. However, there is structure. Boundaries are clear for the whole class. There are class expectations and individual expectations. At the same time, this program allows, provokes, and demands desirable developments which concern the whole child. Each child does benefit from this program, and society will ultimately. The literature review will describe numerous benefits.

Why Look At Spelling?

Parents and educators have expressed concern about students' spelling performances, particularly at the elementary school level and particularly in the whole language classroom. This concern is demonstrated in the number of recent studies that have investigated children's spelling. However, studies as far back as Lindahl (1938) still have an influence on our pedagogical approach to spelling. For instance, Lindahl found that children who first learned to print were superior spellers compared to those children who first learned to write cursively. This is understandable, since people are exposed more often to print than cursive writing (e.g., books and newspapers).

There are several recent studies which suggest that invented spelling, a feature of whole language, allows children to naturally make sense of spelling while involved in frequent and genuine writing activities. In addition, spelling in whole language is integrated with literature studies and is taught in a more incidental manner while reading and writing. The traditional method of spelling instruction involves mostly the use of spellers. Students work through exercises which help them to learn and practise spelling rules. There are many studies that suggest explicit spelling strategy instruction is necessary in order to improve children's spelling performance. Explicit

spelling strategy instruction is clearly different from spelling instruction in whole language and traditional learning environments. Here, strategy instruction involves a direct and systematic approach to learning how to spell. This study investigates the use of strategy instruction in the whole language classroom in comparison with the traditional and the whole language approaches to learning how to spell.

Most educators are genuinely concerned about how to best improve students' spelling performances. Current research suggests that strategy instruction is an effective way of improving academic performance, particularly spelling performance and achievement. Why not combine strategy instruction with a learning environment such as whole language that offers so many other benefits to student?

## Summary

Whole language advocates view spelling as a significant communication skill which gradually improves. Also, children learn that spelling in the initial stages of writing should not be the focus. They get their message down first. If their message is for a specific audience, as when it is presented in the form of a book, standardized spelling is expected and demanded. The

teacher, as co-editor, helps the students develop their stories into acceptable, respectable pieces of work (Butler, 1990).

This study illuminates the qualities of a whole language program and the appropriateness and effectiveness of using explicit spelling strategy instruction within that program. Have teaching methods of the past more than adequately prepared individuals to become responsible, functional, and literate members of society? It is the belief of this author that the whole language philosophy, its practices, and, in particular, the inclusion of explicit spelling strategy instruction will help promote the development of autonomous and literate individuals.

## Hypotheses

The hypotheses were formulated as a result of a strong belief that students learn best in a whole language learning environment and a belief in the need for strategy instruction to further promote independent learning. This study, then, endeavored to answer the following question; "Does the explicit use of spelling strategies in a whole language classroom significantly improve students' spelling performance in just five days?" The hypotheses posed for the current study are as follows:

(a) Explicit spelling strategy instruction will significantly improve the spelling performance and achievement of students in both whole language and traditional settings, (b) Explicit spelling strategy instruction will result in greater improvements in spelling performance and achievement for the students in the whole language setting, and (c) Considering only a five-day study period would be used, students in the control group (i.e., no explicit spelling strategy instruction) should not show a significant improvement in spelling performance and achievement.

## Definition of Terms

Activity-based Classroom: Children learn how to become self-directed by participating in the holistic activities designed by the classroom teacher. Children may choose from a variety of activities but must also work within specified parameters. Certain activities must be completed since they involve the development of skills that the teacher knows are necessary. However, there is choice in the selection of cards within each activity. Also, the activities can often be completed in any order. This causes the students to take responsibility for their own learning. A sense of ownership is established by allowing and encouraging them to make choices and plan at least a portion of their day. Children also have the opportunity to bargain, at

times, by developing a comparable activity if they can show that their creation has more relevance to them but also meets the criteria of a particular skill development. Each activity can be easily modified to be suitably challenging. In this way, a wide range of abilities can be accommodated.

Child-centered: Program planning is geared to address the interests of the children and their cognitive abilities. The teacher acts as guide and resource in learning. The child is responsible for planning as explained in the definition of an activity-based program.

Explicit Spelling Strategy Instruction: Learners are clearly and specifically told that they will learn how to spell words and remember the spellings by learning to efficiently use specific strategies.

Holistic: All learning is integrated so that connections are clearly perceived by the learners. For example, by beginning a thematic unit with a certain story, children can learn about and compare certain cultures, geographical regions, animals and their habitats, specific math and mapping skills, and develop creative writing skills. The connections are endless through the integration of subjects. Holism focuses on relationships to self, others, and the world. It encourages the investigation of new knowledge and how it relates to the learners and our world.

Strategy: A plan of action specifically designed to bring about success in a given area.

Whole Language: An educational philosophy which explains that children learn best using a whole to part logic. Basically, it is the use of good literature in combination with the child's natural language. An appreciation for literature is developed along with thinking and communication skills within a meaningful context. Skill development, problem solving, and creative thinking are developed through the integration of all subjects. This holistic approach to education enables children to more clearly see how they are connected to our world.

## Chapter Summaries

Chapter one established the rationale and purpose of this study. Whole language and explicit spelling strategy instruction are viewed to be compatible and logical approaches to improving spelling performance and achievement. The literature review (chapter two) highlights the beneficial aspects of whole language, the use of strategies, and specifically spelling strategy instruction. In chapter three, there is a description of the population, the instruments, and the method used to obtain the data. The procedures for the two experimental groups and the control group are carefully detailed.

# CHAPTER TWO: LITERATURE REVIEW

## Introduction

The combination of explicit spelling strategy instruction and a whole language program may result in improved spelling and a better quality of writing. I believe that a whole language program, more than other learning environments, offers the most meaningful opportunities to develop written communication. I also believe that children need to learn spelling strategies that will help them to grow as independent and accurate spellers in order to progressively make their written communication more clearly understood to others.

Explicit instruction in all areas may help clarify for students what they should and can achieve. Whole-language-plus-strategy instruction may result in an ideal method of instruction. This study is limited to the investigation of whole-language-plus-spelling-strategy instruction.

Educators need to possess a clearer understanding of both whole language programs and spelling strategies so that children may reap the benefits of both. The literature review presented in this chapter contains a brief review of whole language, strategy instruction, spelling strategies in general, and those strategies to be used in the present study, as well as the developmental

stages of spelling. References to other studies and theorists are provided throughout the chapter in order to support whole language and spelling strategy instruction.

## Whole Language

According to Goodman (1991), the essence of whole language was first introduced by Comenius in approximately 1887. Goodman agreed with Comenius;

> that children can discover new information by being introduced to what is familiar to them within their life's [sic] experiences; by being able to manipulate the concrete objects being studied; and by using the native language talk about what is being learned. (p. 386)

Goodman (1991) also stated that whole language principles similar to those espoused by Comenius were advocated even as early as the 17th century. However, the whole language movement, as we know it presently, began with Kenneth and Yetta Goodman making a presentation about early reading at a conference at the University of Pittsburgh in 1976 (Stahl, McKenna, & Pagnucco, 1994). Although the roots of whole language can be traced back many years and to many theorists, its application is still considered to be relatively new and certainly controversial.

Whole Language and Communication

> human interaction is the single most important ingredient in education, and ... schooling practices should be devised to enhance rather than suppress interaction. (Stanford & Roark, 1974, p. 2)

Whole language stresses student-student and student-teacher interaction based on relevant learning tasks. Eldredge (1991) described ten major practices of whole language. Whole language involves the integration of subjects, and children use their own language to make the transition from oral to purposeful written communication. Writing is encouraged at an early age. Children are frequently exposed to the best appropriate literature for listening to and reading. In addition, many opportunities are provided for the students to listen, speak, and write about given themes. Learning is largely based on personal relevance so that learning can become intrinsically rewarding. Because social interaction is important, children often work together. Instruction is frequently student-centred rather than teacher-centred (i.e., instruction is not based on basal reading skills but on recreational and functional learning activities that reflect the children's interests). Finally, holistic approaches are implemented (e.g., skills are not taught in isolation).

Every aspect of communication is addressed and human interaction is expected and encouraged.

Booth (in Booth & Thornley-Hall, 1991) in stressing the advantages of talking, described what actually happens in the whole language classroom. Classroom talk allows us to:

> think aloud, to tentatively explore the beginnings of ideas, to "hitch hike" on what others have said, to clarify and modify our knowledge base, to affirm the thoughts of others, to acknowledge and enable speakers to continue groping for meaning. (p.7)

Whole language can offer educators many teachable moments on an individual or group basis because children are actively engaged in activities which require verbal interaction. Scudder and Mickunas (1985) explained that meaningful verbal interaction is a tool which educators should use in order to understand children's potential. If educators can recognize the potential each child possesses, then dialogue can be instrumental in bringing about intellectual and academic growth.

Eldredge (1991) found that social interaction and collaborative work were more evident in whole language programs than in regular basal programs.

Such interaction allows educators to assess their students' understanding of the skills they are using and in particular their understanding of spelling rules.

The whole language approach frequently invites students to call upon their prior knowledge as they engage in new activities. As the students have the opportunity to carry on meaningful conversations about their work and write about what they have done, whole language teachers are able to listen and watch for those teachable moments. Observing and listening to the students will alert teachers to that which needs to be taught or retaught. Ceci, Caves, and Howe (1981) demonstrated that prior knowledge can influence new learning. This study should then caution those who promote verbal interaction in the classroom to listen carefully, for much can be learned about what children truly comprehend.

In addition, observation and careful listening allows educators to more easily choose themes of general interest to the students. This may help to ensure that each child will feel some success when activities have been completed. Their prior knowledge may act as the motivation to become involved and it will set the stage for new learning. The discovery of their prior knowledge is, then, one of the purposes and benefits of oral communication within the classroom. Also, children learn to listen and

communicate more effectively as they participate in genuine dialogue. The use of activity cards in a whole language activity-based program (Kwak & Newman, 1985) encourages the development of valid dialogue, improved reading , effective listening, and improved spelling performance through the meaningful writing activities.

Because there is a greater amount of social interaction allowed in the whole language setting, as stated by Eldredge (1991), it seems that verbal fluency would have a greater chance to develop. Eeds and Wells (1989, cited in Stahl, McKenna, & Pagnucco, 1994) found that junior level students in whole language programs were capable of carrying on rich literature discussions. O'Flavin (1991, cited in Stahl, McKenna, & Pagnucco, 1994) found that even second grade students involved in whole language instruction were quite competent in participating in literature discussions and also demonstrated the ability to make insightful statements about story meanings. In order to do this, children must also be developing listening skills. A richer listening, speaking, and spelling vocabulary must certainly evolve.

The whole language program consistently encourages students to engage in verbal interaction. Such interaction is helpful in a program that advocates the use of invented spelling. Tangel and Blachman (1992) stated that

linguistic awareness is necessary in order to produce invented spelling. It seems logical that young children with a large speaking and listening vocabulary who articulate carefully have greater linguistic awareness. Their invented spelling would, it seems, be of better quality than children who are less communicative. This further demonstrates the need for verbal interaction within the classroom .

Chomsky (1959) believed that we all possess a natural competence for language. Some, and this can be seen clearly in young children who are at play, are more competent than others because of any number of influences. Problems, for example, give children reasons to articulate needs and desires. Problem-solving situations occur frequently in whole language environments during work and free time, thus promoting verbal communication and the development of thought.

The experiments of Luria and Yudovich (1956, cited in Luria & Yudovich, 1973) demonstrated that uniovular twins were able to develop their speech when exposed to a rich environment that necessitated the children to show independence and responsibility. The twins made great improvements even though their speech development exhibited phonetical impairment and autonomous speech before the experiment began.

Surely, if young children who are severely impaired and delayed in their development of speech can be regained to standard development through a problem-solving environment which encouraged and modelled correct speech, then normally developing children would surely benefit from this exposure and involvement at least to some degree as well. Whole language encourages such development. Surely there must be a positive effect on normal spelling development as well.

Vygotsky (1962) explained that a disruption in the smooth flow of activity can be an important stimulus for egocentric speech. Whole language offers such situations because total controlling structure is not imposed on the children. A structure of necessity is present, one that shows acceptable boundaries but does not stifle communication. Unexpected problems can also result. All these situations create the need for talking to oneself and others as well as for listening. This encourages the normal development of thought and language. Whole language educators design their programs so that learners will become proficient speakers and respectful listeners who can recognize when thinking out loud and/or dialogue are necessary, what manner is acceptable, and when they might be disruptive. This may be an

excellent starting point for successful written expression , thus the promotion of spelling development.

For most children, oral communication does indeed develop prior to the writing experience (Zarry, 1991). If children can discuss in class the stories they have read, and talk about their activities often as they work, these exchanges of ideas will enrich the writing experience. In addition, here exists a genuinely purposeful invitation for children to listen more carefully. "The premise of whole language ... is that to write, one must have something to say" (Zarry, 1991, p. 10). Zarry sums up what he believes to be the natural progression of the language experience: "Experiencing leads to thinking; Thinking leads to talking; Talking leads to writing; Writing leads to reading" (p.50).

Certainly, the more you talk, the more you have to write about. The increased writing is of great benefit, for educators can better identify the stage of spelling development and can then determine what spelling strategies would be most helpful to individual children. Eldredge (1991) found in his experiment with a modified whole language approach in a first grade classroom that children did their own writing of stories earlier in the year than children in basal programs.

Since verbal interaction was not nearly as apparent in the basal programs according to Eldredge, it seems reasonable to assume that this explains why students in the whole language program wrote sooner. The students also had more to write about for much of the classroom time was spent on functional reading and writing activities. Griffith, Klesius, and Kromrey (1992) also found in their study that students in whole language programs do indeed spend a great deal of time on writing. Would frequency of writing along with direct instruction not encourage students to grow towards greater spelling accuracy ?

It has been shown in several studies that children learn to write best in a whole language environment or at least do as well as children in traditional settings. In addition, Stahl, McKenna, and Pagnucco (1994) reviewed 20 studies which examined children's writing development, 8 of which favoured the whole language approach. Two of the studies favoured the traditional approach and 10 of the studies showed no significant difference between children's writing in whole language and traditional teaching.

Boljonis and Hinchman (1988, cited in Stahl, McKenna, & Pagnucco, 1994) and Gambrell and Palmer (1992, cited in Stahl, McKenna, & Pagnucco, 1994) found that the way children view writing depends on the

type of instruction they have received. Gambrell and Palmer also found that learners in a whole language classroom are more likely to attempt the spelling of unknown words on their own than in traditional type classrooms. Children in more traditional classrooms, however, are clearly more dependent on their teachers perhaps because traditional classrooms are traditionally teacher directed. Students would then be less likely to risk spelling unknown words. This may also indicate in what kind of learning environment children are more likely to grow in confidence and independence.

Biemiller (1993) found that reading meaningful material, as first espoused by Goodman, is a beneficial aid to children who are learning how to read. In addition, children become better readers as they become more skilful in using the context of what they are reading to help them along. Prior knowledge and practice are necessary here. He did find, however, that children do need explicit instruction in word recognition. This is most certainly the case in spelling instruction. This area will be investigated further.

Whole language programs, then, successfully integrate and encourage the use and development of the four basic strands of language (Zarry, 1991): listening, speaking, writing, and reading through recreational and functional classroom involvements.

Whole Language and Themes

The integration of subject matter is most beneficial to students as it helps them to see the connections present in their own lives. The thematic activities designed by teachers must be inviting. The themes must stimulate further academic involvement by touching the senses, thoughts, and feelings of the learners. "The holistic curriculum broadens traditional learning to include all aspects of one's being-- whether cognitive, affective, physical, spiritual, or aesthetic--and thereby extends the curriculum itself" (Miller, Cassie, & Drake, 1990, p. 67).

Kemler Nelson's study (1989) can be viewed as offering support for the view that optimum learning occurs best when new skills and information are presented in context, holistically, as through themes, rather than through fragmented learning. The study showed that infants listen longer to clauses than phrases and prefer single words the least. Speaking single words to infants provides no contextual setting, thus inhibiting semantic developments, according to Kemler Nelson. Apparently there is selective listening, for from the clauses young children will verbalize selected words. The more adults provide in the way of speech to infants, the more there is from which to select. This parallels the idea of a whole language program providing a rich

contextual learning environment where young learners and perhaps older learners may selectively draw on all that makes sense to them.

Further, studies such as that of Bruner (1966), Denny and Ziobrowski (1972), Hasher and Clifton (1974), Mansfield (1977), Melkman and Deutsch (1977), and Worden (1976), all cited in Ceci and Howe (1978), have demonstrated that children in the primary grades learn best through thematic presentations whereas older children employ a taxonomic mode of learning. Because children do not always develop cognitively in unison (Beers, 1980; Piaget, cited in Ginsburg & Opper, 1979), there may be a few children in any given class who may also need to be exposed to a taxonomic mode of learning.

Typical 10-year-old children employed both thematic and taxonomic modes when they attempted free recall of items (Ceci & Howe, 1978). It seems logical that all age levels would benefit from whole language with its integration through themes. The incorporation of taxonomic learning is not a problem. Exposure to both modes is beneficial to learners.

Ceci and Howe, in the same study, explained that children aged four, seven, and ten were all able to classify using both modes. Young children were better able to recall information encoded thematically than

taxonomically. However, free recall of items was most successful when children tried to recall items which had been encoded in their own salient mode. Because cognitive development can vary, even some younger children can be successful with both modes. The 10-year-olds were particularly able to recall items using both modes. This may indicate that this is the age of transition for this kind of thinking.

Often, children are expected to call upon their own experiences or prior knowledge when dealing with creative thinking and new learning. Recht and Leslie (1988) demonstrated the effectiveness of prior knowledge. Two groups of children, one having greater prior knowledge about baseball and the second having far less knowledge, were asked to read a particular baseball story. The group of children possessing greater prior knowledge recalled more story ideas than the low knowledge group. In addition, they were also better able to identify important ideas and incorporate them into summaries. New learning was acquired more easily since prior knowledge acted as a scaffold for the new information which was placed into memory (Recht & Leslie, 1988). This clearly suggests that educators must consider children's knowledge base (Chi, Glaser, & Rees, 1982, cited by Recht &

Leslie, 1988) before presenting new thematic activities if they expect children to feel successful with learning.

Chow, Dobson, Hurst, and Nucich (1991) stated that the use of prior knowledge and oral language by children must be an expectation of whole language teachers. This will help children to become more cognizant of the rules of oral and written language and allow them to more clearly make connections between the known and unknown which may in turn increase confidence and competency in self-expression. Therefore, it is crucial that educators ensure that students build meaningful and accurate knowledge bases.

Lipson (1982) demonstrated in her study that correct prior knowledge had a positive and significant effect on academic performance. This may include spelling performance. In the whole language classroom it is relatively easy to determine if children have any prior knowledge and if it is correct simply by being very attentive to their conversations as they work and by evaluating their paper work in conference sessions.

Lipson further stated that incorrect prior knowledge can be difficult to correct. The integrated nature of whole language, however, immerses the children with knowledge, resources, and learning tasks that may help in the

development of what will be correct prior knowledge in their future learning endeavors. With effective integration through themes, it is easy to understand why students in whole language settings have so much to think, speak, write, and read about, thus continually expanding their knowledge bases. Here is a natural and relevant setting in which to focus on spelling instruction and promote spelling development.

## Spelling

### Whole Language and Invented Spelling

The idea of allowing children to invent their own spelling has been scrutinized and condemned in some studies. There are studies showing that children, as a result of using invented spelling, begin to misspell words they were once able to spell (Beers & Henderson, 1977; Thomas, 1982, cited in Glenn & Hurley, 1993).

Ehri, Gibbs, and Underwood (1988) conducted a study to find out whether misspelling words prior to learning to spell them correctly had a detrimental effect on their accurate recall in the future. In the first experiment, second and third grade students were divided into two experimental groups and a control group. The first experimental group invented spellings for seven nonsense words. The next day, these same

students studied the correct spelling for the nonsense words and then recalled the correct spellings from memory. The second group invented spellings, studied the correct spellings, and recalled the words, all in one day. The control group only studied correct spellings and recalled the words all in one day. The study results showed no significant difference in spelling ability. They did pose a possible reason why invented spellings did not have adverse effects on spelling achievement. The invented spellings were only written out once whereas the correct spellings were practised three times in writing. This may suggest that when children are aware that a deliberate focus is being made on correct spelling, they make the effort to remember correct spellings. They know that their invented spellings are not necessarily correct, but that these spellings merely show their desire to make an attempt.

The fourth experiment involved fourth graders. There were two conditions in this experiment. On the first day, the experimental group invented spellings while the control group rested. On the second day, both groups studied the correct spellings of the words and on the third day, the students recalled the words. The experimenters stretched the study over three days so that invented spellings and the correct spellings could each have a chance to enter long-term memory. Once again the groups did not differ in

spelling ability. Two other similar experiments were also conducted using college students. The experimenters found that invented spellings apparently did not enhance or deter the spelling abilities of students at any age level.

More and more research seems to favour or at least accept invented spelling and recognize it to be a natural development (Tangel & Blachman, 1992; Ehri, Gibbs, & Underwood, 1988; Richgels, 1986; Read, 1971). In the whole language program, invented spelling can be viewed as an invitation extended to all students to participate in written communication regardless of their spelling abilities. The use of invented spelling by children simply means that children participate in written communication without inhibitions and much worry about words being misspelled. Children experience at least some success with written communication, thus maintaining and promoting enthusiasm and independence.

Gentry (1984) said that invented or developmental spellings result from different strategies that children use at each stage of cognitive development. As standardized strategies are learned, the invented spellings of children become more accurate. However, when spelling is not a major concern, children are not discouraged from participating in writing down their

thoughts nor are they frustrated as easily as when they know every incorrectly spelled word will be circled.

Bean and Bouffler (1987) stressed that spelling should not be an issue in the initial stages of writing. Educators will know when children are ready to work towards standardized spelling. Until then, children must be encouraged to have fun and write down the sounds they think they hear. This makes spelling and writing less risky. Read (1971) suggested that we respect the natural spelling of children and learn to work with it.

Children demonstrate an interest in written communication at a very early age. For example, Junior Kindergarten children have often been observed to mimic adult writing by using random letters and numbers (Scott, 1993). This developmental stage has been appropriately named the "scribble writing" stage by Scott. Should we discourage these "would be writers" by telling them that they are not really writing and their work contains only errors? More than likely, such a response from a parent or teacher would result in a child fearing participation in any type of communication.

Would it be prudent to discourage a baby from babbling? No doubt this would inhibit the healthy development of thought and language. Babies need to practise verbalizing their thoughts until they get it right. Forester (1980,

cited in Rivalland, 1985) described babbling as the first stage of oral development, followed by one-word sentences, two- and three-word sentences, using rules of language to suit their needs but not always correctly, overgeneralization of rules that have been learned, and in the sixth stage speech is used more precisely. Rivalland stated that children learn to talk effectively because they are exposed to good models and are provided with the opportunities to practise speaking in meaningful situations (Chomsky, 1971, cited by Rivalland, 1985).

So too, in the next strand of language, must children practise writing their thoughts. Granted, parents and teachers have an obligation to help children develop their thinking, speaking, writing, and reading by providing the conditions and strategies that are most beneficial. Certainly it makes sense to allow them to also practise in a way that is most natural to them, just as babbling is natural to babies. Invented spelling is natural and the whole language environment, because it is holistic in nature, allows children to practise writing and spelling in a meaningful context. It has been determined to be reflective of children's natural development. Through assessment, these spellings can be used to help children move towards standardized spelling (Ehri, Gibbs, & Underwood, 1988; Foorman, Novy, Francis, & Liberman,

1991; Glenn & Hurley, 1993; Griffith, 1991; Griffith, Klesius, & Kromrey, 1992; Richgels, 1986; Read, 1971; Scott, 1993).

Children's invented spelling genuinely reflects their spelling abilities. Educators can assess what spelling skills children possess and what skills they are perhaps ready to learn. Invented spelling can help educators to determine how familiar young learners are with the sounds of the letters in the alphabet (Griffith, 1991). Through invented spelling, children learn more about phonemes and attempt to use phonetics to discover how to spell (Scott, 1993).

Glenn and Hurley (1993) warned that when allowing students to use invented spelling, it is important to make sure they know that they are in the process of learning standardized spelling. In the meantime, invented spelling allows children to experiment with the English language. Griffith, Klesius, and Kromrey (1992) found that invented spelling helps the development of phonemic awareness and letter-sound relationships. The whole language students in their study were able to write more words and used more interesting words than the children in traditional classrooms. The whole language students were also less accurate than the traditionally instructed students who tended to limit their writing by mainly using words they were

familiar with. Putting a limit on one's own word usage would certainly affect the quality and authenticity of written self-expression. However, the whole language students availed themselves of the prospect of genuinely relevant and individualized spelling instruction by using more words and being less inhibited about it. This is a perfect opportunity for incorporating explicit spelling strategy instruction.

Zutell (1975) found that spelling development involves cognition and the linguistic process, but that "it also requires the active, exploring participation of the learner" (p.79). He suggested that this might be done effectively in an environment that encourages the use of natural language by providing a number of activities that involve speaking, reading and writing. The students must also be given the opportunity to formulate and test their efforts. This describes whole language and invented spelling.

Children's readiness to learn to spell can be determined by educators. Woloshyn and Pressley (1990) described eleven criteria which can be used to make such a determination. Briefly, these are the 11 criteria: must be able to print name, can copy words, spell name, enunciates words clearly, recognizes common letter-sound combinations, knows that words consist of different letters, asks for spelling of words from time to time, prints some words from

memory, expresses some thoughts in writing, reads at second grade level or better, and has expressed explicit interest in spelling. Students need to experiment and naturally develop spelling skills. Educators can assess in order to find out the real spelling abilities of students.

Zutell (1975 ) confirmed that invented spelling can be an important assessment tool because children's spelling does reflect a progression through stages. As a result, educators can get important instructional information by looking at the independent written expression of any student. For example, educators can determine what spelling strategies need to be taught in order to promote development towards standardized spelling. In order to more effectively prescribe the relevant spelling strategies, educators must be well versed on the stages of spelling development.

Developmental Stages of Spelling

The very fact that children typically perform differently and progressively better at each age is certainly a confirmation of the existence of cognitive development. At each age, children display unique differences and similarities. The similarities at varying ages can be generalized as characteristics for a particular span of years. Further, this is not a

phenomenon which observes the strict passage of time (Beers, 1980; Ginsburg & Opper, 1979).

Spelling has been described as a cognitive process (Block & Peskowitz, 1990; Bookman, 1984; Woloshyn & Pressley, 1990; Wong, 1986;). Wong (1986) explained that because children appear to progress through developmental stages of spelling, it must be a cognitive process. Spelling instruction should be based on principles taken from cognitive psychology. In other words, the spellings of words can not be learned simply through memorization. Wong said that children must understand what they are spelling in order to become more efficient spellers. That is, semantic and syntactic knowledge are helpful when spelling many words. This suggests contextual learning with explicit spelling instruction.

Anderson (1985) also concluded that learning to spell is a developmental process in which children learn about the structure of writing and how sounds are represented. She observed in her research that spelling ability grows gradually over the years beginning with the simple aspects of written language and moving to the more complex aspects.

Although different researchers have provided various labels for the stages of spelling development, the general progression is relatively the same. For

instance, Gentry (1977; cited in Bookman, 1984) described a four-stage developmental hierarchy: prephonemic, literal phonemic strategy, rule governed, and correct. Compare these stages to the three stages described by Woloshyn and Pressley (1990): prephonetic, phonetic, and transitional. They also acknowledged that a fourth stage may exist where correctness is displayed more often. Tarasoff (1990) named these six stages: pre-communicative, semi-phonetic, phonetic, transitional, standard, and continued development. Regardless of the specific names of the stages of spelling literacy, teachers need to be aware of this progression. With this awareness, children's work can be assessed and proper strategies can be selected and taught with the expectation of successful spelling outcomes.

Where development has been sectioned into numerous stages (i.e., Tarasoff, 1990) educators may perhaps be better able to pinpoint what strategies are being employed by a slower or faster learner. Individualized instruction is a little easier because once a stage has been identified, there are fewer characteristic spelling behaviours, thus fewer strategies from which one must choose. Fewer developmental spelling stages (i.e., Woloshyn & Pressley, 1990) will encompass more spelling behaviours within each stage and will also address more spelling strategies which can be used in whole

class instruction. For some educators, it may be preferable to look at fewer stages, as when giving spelling instruction to a class or group of students who appear to be homogeneous.

Knowing which stages are most typical for each age level helps educators to more quickly determine what common spelling errors to watch out for. For example, Beers (1980) found that some children can not learn rules applying to short vowel sounds before the age of seven as some reading and spelling series have demanded. She recommended introducing vowel sounds over an extended period of time while exposing children to other appropriate strategies. Some children do not have the cognitive ability to deal with rules and generalizations that stem from a heavy phonics program. Because of this, she suggested waiting until the concrete operational stage before teaching some rules. This would mean waiting until children are about seven years of age. Her study pointed out to educators that care must be taken to ensure that age-appropriate strategies are selected and taught to children who are cognitively ready.

Strategy Instruction: What Is It and Why Use It?

A strategy, very simply, is a plan of action or a way of doing something in order to attain specific outcomes. Explicit strategy instruction involves

teaching students to use specific strategies to reach a particular goal. For this study, spelling strategy instruction involves explicitly teaching students how to use selected spelling strategies in order to learn and remember the spellings of presented words. In addition, there is the expectation that spelling strategy instruction will also generate the ability to generalize some of the acquired strategies and rules in order to independently attempt the spellings of unfamiliar words.

Effective strategy instruction consists of the following components: strategy use, making clear what the rationale is for a particular strategy, and a vehicle for using the strategy (Gaskins & Elliot, 1991). For this study, that means that the children must clearly understand what spelling strategies will be used in order to help them learn and remember the spellings of the words. Secondly, the children must be convinced that they will be highly successful using the strategies with the stipulation that they concentrate and use the strategies as directed. Thirdly, the vehicle or content, which in this case would be the new spelling words, must be presented and the strategies employed with the intent of success.

Children are constantly and actively involved in processing information in an effort to make sense of unfamiliar material (Mayer, 1992). They do this

with varying degrees of success. Mayer stated that although a primary goal of education is to help children make sense of things more efficiently and become experts at how to learn, educators do not provide them with sufficient opportunities to learn appropriate strategies that will allow them to become independent learners (Mayer, 1987, 1992a; Pressley, 1990; Weinstein & Mayer, 1985; all cited in Mayer, 1992). In addition, Mayer pointed out that cognitive theory and educational psychology, when looked at together, can help educators to see more clearly what needs to be taught, how it should be taught, and when it should be taught. In many cases, strategies appropriately address the "how."

Studies have shown that a variety of strategies have accorded children with a high degree of success with learning. Of course, a high degree of success, which is a direct result of specific strategy instruction, must be indicative of how well the strategies were used. Pressley, Borkowski and Schneider (1987) have outlined these five components which are indicative of what they call a good strategy user: (a) has a large repertoire of strategies useful in obtaining goals, (b) knows how, when, and where to use the strategies, (c) knows effort is needed in carrying out the strategies, (d) domain-specific knowledge may prompt the use of a strategy that might not

ordinarily have been thought of and improves the efficiency of the strategy being carried out , and (e) first four components and their coordination are automatized.

Strategy use can become second nature to learners, thus enabling them to be independent and lifelong learners. This can be accomplished if educators choose to recognize the significance of strategy instruction and then explicitly incorporate its use, modelling determination and enthusiasm.

Strategy instruction brings successful learning to those of varied abilities, not only to "average" or "above average" learners. Reid and Borkowski (1985, cited by Pressley, Borkowski & Schneider, 1987) demonstrated that hyperactive, underachieving children in the second, third, and fourth grades could improve their self-control and decrease their impulsivity. The strategies used in that study taught the children that behaviour is controllable, that successes were attributed to strategy use, and failures were attributed to lack of proper strategy use. It is logical to assume that children would be more likely to try again if failure were experienced since their personal ability would not be questioned. Lack of success would be blamed on not using the right strategy or not using it with sufficient effort or efficiency.

This approach was incorporated into the current study. After the children used the three main spelling strategies to learn the new words, they were told that the say-spell-say practice strategy would show them how well they used the three learning strategies. So if the students could not spell the words without looking at them, they knew that they did not use the strategies correctly and would have to try harder. Ability would not be the issue, for that would certainly affect self-esteem.

All children, regardless of abilities and problems, are capable of learning as long as a systematic approach using specific strategy instruction is implemented. Learners need specific direction and instruction about how to achieve success. Some learners simply need more time to become efficient strategy users.

All children need reasonable, loving, and consistent discipline and attention during those critical first four years of life. Many parents, either knowingly or unknowingly, incorporate the use of a variety of strategies in raising their children, particularly during this critical period of development. It would be logical then to make a point of continuing the use of strategies in school where the strategies can become progressively more complex in

response to each learner's needs. With perseverance, appropriate strategies can have ameliorative effects.

The use of strategies has been proven effective in improving the ability to focus on new material, learn it, and remember it. Harris, Graham, and Freeman (1988) showed that strategy training results in improved metacognition which affects performance of skills. It has also proven to be effective in changing attitudes and behaviours. It seems reasonable that promoting strategy use at an early age, in the home and particularly at school, would bring about desirable academic and behavioural results in more children sooner than what has been the norm. Several more studies involving the use of various strategies will be described and offered as supportive evidence for the use of strategy instruction in the development of spelling skills in the next section.

Smith (1975) found that a systematic approach to spelling resulted in improvements. Many other investigators are referenced in order to show which spelling strategies, used systematically, bring about significant improvements in spelling performance for learners in different grade levels and varied abilities. Strategy instruction clearly has been shown to have a positive impact on children possessing varying abilities.

Tarasoff's Spelling Stages

At this point, it would be helpful to look more closely at Tarasoff's (1990) stages of spelling development to explore the characteristics of each stage. A discussion of stage appropriate strategies will follow.

Children in the pre-communicative stage typically draw squiggles or print strings of letters much like the stage of scribble writing described by Scott (1993). In the semi-phonetic stage, sight words, initial, middle and final consonants, vowel markers, and spaces between words are characteristic. More sight words, long vowel patterns (e.g., "oa" as in coat, "ow" as in "snow," "o-e" as in "hope," "ol" as in "cold"), short vowels and spaces between words characterize the phonetic stage. In the transitional stage, Tarasoff described the usage of r-controlled vowels (e.g., "ear" as in "learn, "or" as in "more," "a" as in "car"), diphthongs (e.g., "ou," "ow," "oi," "oy"), and inflectional endings (e.g., "ed" and "ing") and the ability to spell more words automatically. Normally developing students entering the standard stage may begin to demonstrate an understanding of spelling/meaning connections (e.g., aqua--water), use a variety of spelling strategies and are soon able to spell many more words with ease. In the final stage, writers show the skilful use of strategies to spell words. Knowledge and

understanding of the spelling stages will enable educators to be more effective resources and guides to learners. This kind of scaffolding may help to develop and reinforce spelling learning.

Stage Appropriate Spelling Strategies

The descriptions of the pre-communicative and semi-phonetic stages suggest that children in Junior Kindergarten to possibly early first grade are ready to learn to name and print the letters of the alphabet, and perhaps learn the sounds of the letters. In that case, phonemic awareness or letter-sound awareness is one most appropriate strategy to employ explicitly with young children (Ball & Blachman, 1991; Byrne & Fielding-Barnsley, 1991; Foorman, Novy, Francis & Liberman, 1991; Lundberg, Frost & Peterson, 1988; Richgels,1986; Tangel & Blachman, 1992) who are in the late pre-communicative and early semi-phonetic stages.

It would be reasonable for educators to focus more on simple letter recognition and saying the alphabet with Junior Kindergarten and some Kindergarten students. Letter-sound relationships should be fairly established by the first grade. Fowler (1991) pointed out that children between the ages of five and seven, being in the concrete operational stage according to Piaget,

are cognitively ready to understand phonemes. Phonemes or segmental awareness are a subset of phonological awareness (Morais, 1991).

This is an important development because there is evidence that metaphonological awareness has a positive influence on the acquisition of reading and spelling skills (Lundberg, Frost & Peterson, 1988). Block and Peskowitz (1990) explained that metacognition, which they defined as being aware of one's own state of knowledge, should help spellers determine if a word is spelled correctly or how difficult a word will be to spell. It follows then that by equipping children with the spelling strategies most appropriate for each developmental stage, their spelling awareness will progressively increase and so will their ability to spell.

Griffith (1991) demonstrated that phonemic awareness helped first grade students with their invented spelling. Invented spellings cause children to recall the learned phonemes. This study examined the relationship of phonemic awareness and word specific information on spelling development. It also looked at the relationship between phonemic awareness and the acquisition of memorized spellings. Her results showed that phonemic awareness had a greater effect on students in the first grade than on students

in third grade which demonstrates the appropriateness of different strategies for different ages or developmental stages.

However, the high phonemic awareness groups for both Grades One and Three were better spellers of regular and irregular words than students in both grades who possessed low phonemic awareness. This study seemed to imply that it is worthwhile to spend time developing phonemic awareness in all the primary grades in general.

Students in first grade, according to the stages of semi-phonetic and phonetic, can be taught consonant and vowel sounds and the phoneme/grapheme patterns. This suggests phonic instruction. Russell (1958, cited in Cramer, 1969) found a significant relationship between verbal auditory skills and reading and spelling ability in first, second, and third grade children. Poor spellers were significantly inferior in auditory discrimination. Cramer concluded that there appears to be a high relationship between phonics and spelling and that training in auditory and visual discrimination aids spelling development.

From these studies, it seems apparent that phonic instruction and training in auditory and visual discrimination are two suitable strategies for this age group in general. However, Woloshyn and Pressley (1990) strongly

recommended that educators do not rely heavily on phonics because this will not provide students with the knowledge necessary to spell polysyllabic words in later years which cannot be spelled correctly by using phonics. One example they give is the word "circumference." It has 396 million different phonetic spellings of which only one is considered to be standard.

Initially, phonics allows children to be independent spellers, particularly when they are first involved with invented spelling. Students need to become exposed to many spelling strategies because the English language has so many irregularities and regularities that it necessitates the learning of a variety of strategies.

Students in first or early second grade may be in the phonetic stage. Since children in this stage demonstrate an understanding of word concept by leaving spaces between words, they can also be taught to use mental imagery, a whole word approach that demands students note each letter of a word in sequence (Woloshyn & Pressley, 1990; Sears & Johnson, 1986; Radaker, 1963). Pressley, Cariglia-Bull, Deane, and Schneider (1987) found in their research that imagery training first showed benefits to children six and seven years of age. The effects of imagery training appeared to become greater with age until the end of grade school. So, children in the second and third

grades would certainly benefit from this strategy. Imagery training is an appropriate and important spelling strategy for the stage of transition. More discussion of this will follow later.

Another strategy that would be beneficial in the primary years and early junior years of spelling instruction is phonemic segmentation. This is the ability to recognize that a spoken word is made up of a sequence of individual sound units (Ball & Blachman, 1991). Liberman, Shankweiler, Fischer, and Carter (1974) demonstrated that cognition levels determined the efficiency of the strategy. More specifically, they showed that children can be aware of syllables and phonological strings before they receive literacy instruction.

Preschoolers, Kindergarten students and first grade students were tested on their ability to segment words according to syllables and phonemes. All groups demonstrated a significant difference in their abilities to segment words using these two methods. In each case, students found syllabic segmentation much easier, and became more skilful at it each year. By the end of first grade, 70% of the students were successful in phoneme segmentation and 90% were successful with syllabic segmentation.

Through extrapolation, it would seem that by third grade, segmenting words according to their phonemes should be relatively easy for most children. Perhaps the initial use of syllabic segmentation will help students ease into employing phonemic segmentation. Because segmenting words according to their syllables appears to develop naturally, it may be a very useful spelling strategy for children who are in the transitional stage. Henderson (1985) pointed out that children in Grade Three are in particular need of syllabic awareness, among other spelling strategies, as it helps them to learn to spell those polysyllabic words with which they will be frequently confronted, in Grade Four. Syllabication, he said, helps children to deal with segments of words as if they were simple single syllable words which often follow reliable vowel-consonant patterns.

Anderson (1985) explained that children begin to put together all the conventions of the spelling system in the stage of transition, where they realize that the spelling of words is not dependent on phonology. Typically, children in third grade are considered to be in this stage. They rely less on phonological aids since they have firmly developed a concept of word structure. As Tarasoff (1990) described, children at this stage are ready to learn more about inflectional endings ("ed" and "ing"). Henderson (1985)

explained that one-syllable words with inflectional endings is a suitable target lesson for second grade students. Third grade students should graduate to learning how to spell two-syllable words, plus inflectional endings or common prefixes and suffixes, and unstressed syllables such as "er" when used to make comparisons. Word building (Scott, 1993) as a result of rules such as dropping the "e" before adding the inflections of "ed" and "ing" and changing "y" to "i" before adding "er" and "est," may be a useful spelling strategy at this point in development.

Learning how to add suffixes to root or base words helps spelling learners to increase their structural knowledge and understanding of words. Clearly, this is an asset in learning to spell since spelling is a cognitive act. Wong (1986) explained that children become cognitively capable of coordinating knowledge of phonemes, phonemic relationships, orthographic or spelling patterns, syntactic and semantic knowledge of words. She stressed that more than memorization is necessary in order to learn and remember new spellings. Children must understand what they are spelling.

Wong (1986) conducted the study to find out if spelling could be improved by having students hear words and their meanings, say the words in syllables (syllabic segmentation), participate in structural word analysis

(word building), and use a self-questioning strategy. The subjects were thirty Grade Six students identified by their teachers as poor spellers. They used a unit of spelling from the curriculum which taught root words as verbs being transformed into nouns (e.g., vacate - vacation).

After the students were trained by hearing word and meanings, using syllables, looking at structures of root and suffix, and by looking at some irregularities, the subjects used a grid containing instructive questions to help them study the eleven words. A self-questioning strategy consisting of seven steps was used for the spelling tests. On the original screening test, this group of children had a mean accuracy of 27%. One week after the experiment, accuracy was 78%. Two weeks later it was 79%. The author concluded that knowledge of phonics and/or the linguistic structure of words and knowledge of spelling strategies are necessary to positively affect spelling achievement and to prompt a self-check. Her study demonstrated that spelling performance improves as soon as children are taught effective spelling strategies. The improvements described in this study also imply that the specific combination of spelling strategies selected by Wong were effective.

Specifically, with the addition of suffixes to base words having two syllables (or three syllables to present a challenge) the result is polysyllabic words. Syllabic segmentation, which was used in Wong's study, and supported by Henderson (1985), proves to be a very useful spelling strategy that will help students to spell words in chunks. "Chunking" has been proven to be a more manageable, efficient way of remembering. Case, Kurland, and Goldberg (1982) suggested that chunking and mnemonic strategies may enhance memory and learning. Careful pronunciation of standard spellings has been demonstrated to facilitate spelling learning (Drake & Ehri, 1984). This may suggest that practising words by carefully saying and spelling them in chunks, or syllables, will help students to more easily commit them to memory and to later recall correct spellings.

Case, Kurland, and Goldberg, in the same study, referred to this process of efficient memory storage as operational efficiency. That is, instead of the memory's processing space increasing in size, the amount of space actually needed to process basic information actually becomes smaller. The use of strategies can cause basic operations to be learned and processed much faster and efficiently, thus less memory space is required. As a result, more space becomes available for storing future information.

The use of imagery in the transitional stage of spelling should be particularly effective. This is clearly evident after examining the Taxonomy of Image Provoking Behaviours Profile described by Solomon (1974). He defined visual imagery as mentally looking at pictures. Auditory imagery is, for example, having a song run through your mind. Brower (1947, cited in Solomon, 1974) established that the majority of students have mental imagery, visual imagery in particular.

Solomon said that the stages of Piaget and Bruner are similar in that they both suggest the progression from concrete to abstract. Solomon combined the cognitive stages of Piaget and Bruner to formulate the following continuum: concrete level, concrete-imagery level, representational level, and finally, the abstract level. He explained that developments are not described to be different from Piaget's stages, rather, the combined stages simply incorporate explicit reference to imagery, reinforcing its importance in behavioural development.

Very simply, Solomon described the concrete stage as a period when children are not capable of dealing with what is not visually apparent to them. In the second stage, children are capable of imagining that which is not present. This is the stage where "imaging" develops. Once it has sufficiently

developed, the representational stage is entered. In this stage, children can manipulate their mental images. For example, Solomon says that children can experience vicariously the adventures of a story book character. In the final stage, children rely less on images, but this transition is rarely completed.

Imagery appears to be have an integral role in cognitive development. Therefore, mental imagery should be taught and routinely used by students. By providing rich experiences, educators can help students to develop their imaginations. Images are recalled more easily with practice. Positive developments in behaviour and academics can be encouraged through imagery. Educators must remember that children are unique, therefore there must be an awareness that not all children may be capable of learning to use imagery as a strategy for learning at the same time. Imagery, for the purpose of this study, can be used as a spelling strategy at the Grade Three level. Studies have proven that this strategy is effective in helping children to remember spellings (Sears & Johnson, 1986; Radaker, 1963).

Radaker (1963) demonstrated that children, aged 8.5 to 10.5, receiving visual imagery training, score higher in spelling activities. He proved such training was effective in helping normal and retarded children to spell

unfamiliar words. Two levels of imagery training were used. The higher level received six 45-minute sessions while the lower level received only two of those sessions. Subjects studied the sequenced words (one per card) by noting each letter in the word presented. Then they closed their eyes and tried to visualize the word in their minds as if seeing it on a screen. The images were to be held for one minute. It was also suggested to imagine nailing or pasting each letter in place. There was no significant difference between the high and low levels. Both high and low levels, however, performed significantly better than the control group.

This study demonstrated that imagery training requires little time in order to make significant improvements. In addition, the effects of this training were long lasting (one year had elapsed between the first and last test).

Sears and Johnson (1986) compared the use of visual imagery with computer, kinesthetic, and auditory training to study words in order to determine which factor had the greatest influence on spelling performance and memory retention. Fourth, fifth, and sixth grade students were assigned to four treatment groups. Radaker's (1963) strategy was the model used for the visual imagery treatment: picture the word, imagine it on a screen, imagine pasting the letters, and imagine nailing the letters. Computer

treatment involved looking at the word, typing it, waiting for the word to disappear, and typing it again. The kinesthetic treatment involved copying the word. Auditory treatment focused on correct pronunciation and the relationship of letters to sounds. Also, students listened to the word and the spelling of the word on tape.

All four treatments were supervised by teachers. The spelling performance of the auditory group was significantly lower. There were no significant differences among the visual imagery, computer, and kinesthetic groups. The last three groups are actually quite similar in that all three demand the learner, at one point of each treatment, to visualize the word from memory.

Mental imagery helps children to see with exactness (Boyd & Talbert, 1971). Horrocks (1966, cited in Boyd & Talbert, 1971) defined eye learning or eye repetition as the ability to clearly see an image of the letters in a word in the correct sequence. Three types of imagery are identified by him.

First, the natural speller has the ability to recall the exact spelling of a word by using a photographic memory. This is referred to as visual imagery. In the second type, also referred to as visual imagery, the "trained" speller is able to learn spellings by carefully examining and memorizing the letters. In

using kinesthetic imagery, a speller is able to write the whole word automatically, but must then determine if the word "looks right."

In a class, there may be any number of children who may fit into one of these types. Explicit instruction on the use of visual imagery as a spelling strategy instruction would be suitable for all three types. It may enhance their natural imagery learning style.

Perin (1982) found that poor readers have a small sight vocabulary. As a result, they do not have enough in their memory to use as a basis for spelling. In other words their memory is low on visual orthographic images (Ehri, 1980 & 1982, cited in Glenn & Hurley, 1993). Imagery training of whole words may improve spelling performance. However, if children become familiar with chunking words according to their natural segments (syllables) they may learn to decode polysyllabic words more quickly and efficiently and then more easily commit them to memory. Syllabic segmentation, if viewed as being operationally efficient, may be an excellent strategy for building up visual orthographic images when used with imagery. Thus, if the sight vocabulary of good and poor readers can be increased, then spelling accuracy should also be positively influenced.

Spelling and reading vocabularies could be increased by using a spelling/meaning connection (Scott, 1993; Templeton, 1983). This is typical of the standard stage of development. Templeton explains that the majority of spelling/meaning patterns come from the Greek and Latin languages. Because of this, say Chomsky and Halle (1968, cited in Templeton, 1983) the English language is offered some regularity. For example, Templeton listed the prefixes *mono-, bi-, tri-,* and *quad* which are Greek number prefixes as a good starting point for teaching the strategy of spelling/meaning. Knowledge of these prefixes would help older students to increase their general understanding of words containing those prefixes as well as offer direction in spelling them.

Olsen, Logan and Lindsey (1988) demonstrated that students who used strategies were more in control of their own learning and were metacognitively superior in spelling to those students who are not gifted in spelling. The literature review establishes that study results have consistently shown that educators can facilitate spelling accuracy. This is done by deliberately incorporating certain strategies into their programs while also considering carefully the cognitive development of all the students. This will help to support students' continued development so that they will become

independent spellers with a conscience for spelling (Block & Peskowitz, 1990; Woloshyn & Pressley, 1990).

Specific Observance of Developmental Stages

Woloshyn and Pressley (1990) pointed out that all children go through developmental stages, even those students who have been classified as mentally challenged. They may simply progress through the stages a little more slowly and, as a result, the stages are not age-typical. This is demonstrated in Bookman's study (1984). She found that the learning disabled adults (average age was 23) in her study showed similar types of spelling errors in their spelling performances as the group of Grade Five students. The LD adults who were low in spelling and reading, and the Grade Five students made progressively more dysphonetic and phonetic errors as the words became increasingly more difficult.

Boder (1973, cited in Whiting & Jarrico, 1980) determined that 63% of dyslexics are dysphonetic and although they also go through developmental stages, spelling strategy instruction can not be based on what is considered to be normal development. For example, phonics instruction would be useless to children who have dysphonetic dyslexia. A whole word approach would be more suitable. Educators must be on the alert for those children who have

trouble with phonetic spellings. Their problem may not simply be slow progress through the developmental stages, but it may be the problem of dyslexia.

Because there is a developmental change in children's strategy use (Guttentag, Ornstein, & Siemens, 1987), educators must consider what strategies are best for each stage of development. It may also be necessary to determine what strategies are most beneficial to girls and to boys. Allred (1990) showed in his study of gender differences in spelling achievement that, generally, girls from first to sixth grade spell better than boys regardless of the geographic areas studied. He used 3,024 students and based his conclusions on the results of their written and proofreading-type tests. Educating the educators on the problems of gender differences is strongly suggested by Allred. He felt that teaching strategies, among other resources, need to be gender appropriate.

In addition to recognizing that many girls may develop cognitively more quickly than boys where spelling is concerned, educators must also keep in mind that stages of development overlap. That is, students may display spelling behaviours characteristic of more than one stage of spelling development. Also, one classroom may have students representing as many

as four spelling stages. Educators must be ready to accommodate the special needs of classes and individual girls and boys by having knowledge of all the spelling stages of development and having a store of stage appropriate strategies so that spelling learning can proceed more autonomously for each unique learner.

## Conclusion

As a result of reviewing holism, the whole language philosophy and teaching approach, the developmental stages of spelling, and the specific spelling strategies, it seems quite clear that the merging of whole language and explicit spelling strategy instruction would be the most effective educational setting for a learner. The implementation of strategies within all areas of the holistic, whole language environment would enhance the learning process even further.

Strategies and the whole language approach can positively influence student performance, but teacher expectations must also be clearly understand. Good and Brophy (1987, cited in Alderman, 1990) documented the effects of teacher expectation on students' achievement. Children must know that their teacher expects them to succeed and they must also be assured that the necessary skills or strategies will be taught to them

(Alderman, 1990). Students in a whole language setting are offered many opportunities to succeed. Whole language advocates do clearly encourage their students to take responsibility for their own learning whenever possible.

Stahl, McKenna, and Pagnucco (1994) recognized the need for eclecticism. Slaughter, (1988, cited in Graham & Harris, 1994) found that there are in fact many whole language teachers who are currently using direct and indirect teaching methods. Harris and Graham, (1993, cited in Graham & Harris, 1994) found that integrating strategy instruction into whole language classes positively influenced the writing performance of most of the students in the class.

Gentry (1984) suggested that spelling should not be confined to formal instruction because it is a language based activity which is best developed in a whole language environment. Children can then see how functional our language is through integration. He agreed that spelling is developmental and children need to practise in a meaningful environment. But, Gentry also recognized the need for formal instruction (1984). Although children do develop some skill in spelling, incidentally, they do need instruction in order to cope with the vast number of spelling rules, generalizations, and exceptions so they become independent and resourceful spellers.

Eldredge's (1991) study looked at a modified whole language approach in a first grade classroom. He found that at least nine of the ten practices of whole language were implemented along with a daily 15-minute intervention period. At this time, the children received phonics instruction that was unrelated to their thematic activities. He found that the students in the modified whole language program made greater gains than the students in the basal program in the areas of phonics, vocabulary, reading comprehension, and total reading achievement. This study is of particular interest to the current study because a modified whole language approach is also used. In addition, the intervention period involved spelling instruction of theme-related words.

Alderman (1990) stated that strategy instruction enables children to feel in control of their successes. This is a good reason to incorporate strategy instruction into a whole language program where children are under the guidance of the whole language teacher.

From this literature review, it may be concluded that optimum spelling instruction and learning are more likely to occur if educators: (a) possess a working knowledge of the developmental stages, (b) use the whole language approach, thus allowing children to write often and to freely use invented

spelling so accurate assessments and evaluations can be made, (c) know which and when spelling strategies should be taught, and (d) make use of children's prior knowledge (i.e., making a list of spelling words from a familiar context such as a story or theme). In further support of this last point, Smith (1975) found that learning to spell words presented in context was much easier than learning to spell words that were simply presented in list form. The two experimental groups in the current study reflected this thinking. One group had the words presented in context while the second was presented with a small list each day.

The current study hopes to illustrate that whole language and spelling strategy instruction are a successful compromise. As a result of this literature review, it would seem that explicit spelling strategy instruction will result in spelling performance and achievement that is significantly better in a whole language setting where the spelling words are in context, than in a traditional setting with explicit spelling strategy instruction using words out of context.

The hypotheses as stated in chapter one are as follows:

(a) Explicit spelling strategy instruction will significantly improve the spelling performance and achievement of students in both whole language

and traditional settings, (b) Explicit spelling strategy instruction will result in greater improvements in spelling performance and achievement for the students in the whole language setting, and (c) Considering only a five-day study period would be used, students in the control group (i.e., no explicit spelling strategy instruction) should not show a significant improvement in spelling performance and achievement.

## Current Study

The current study explicitly taught students who were in the phonetic, transitional and standard spelling stages of development to use spelling strategies in both whole language activity-based and traditional learning environments. Because the students were in the third grade, it was appropriate that the current study involved the use of the following strategies: (a) word building (Henderson 1985; Scott 1993; Tarasoff, 1990) to help develop structural word knowledge as suggested by Wong (1986); (b) syllabic segmentation as suggested by Wong (1986), Henderson (1985), Liberman, Shankweiler, Fischer, Carter (1974); and visual imagery as stressed by Solomon (1974) and Brower (1947, cited in Solomon, 1974) and proven effective as a spelling strategy by Sears and Johnson (1986) and Radaker (1963). The literature review suggests that these particular

strategies should provide the children in the three aforementioned stages of spelling development to experience varying degrees of success with the spellings of suitably challenging words.

Spelling strategies are seen to have a twofold job. They are useful in helping students to spell unfamiliar words and to recall the spellings of words stored in memory as well. Through the acquisition of spelling rules established while using the word building strategy, children have prior knowledge to call upon when trying to spell unfamiliar words. Most children in third grade (typically transitional) are beginning to build up a repertoire of spelling rules. Since the word building strategy can naturally lead to the introduction and reinforcement of spelling rules, it was chosen to begin each study lesson.

Word building results in polysyllabic words. For the transitional child to effectively deal with the spellings of polysyllabic words, a phonological strategy, such as syllabic segmentation, would help with sounding out these spellings. In addition, this chunking approach may help the students to memorize and recall the spellings with a little more ease. Syllabic segmentation, used as the second strategy, may cause children to focus on the established segments of the root word and on the suffixes. The children

would not be guessing the sounds as they do when using invented spelling; they would be carefully sounding out in syllables while looking at the correct spelling. Drake and Ehri (1984) found that careful pronunciation enhances spelling performance.

Looking at syllables has been described as an effective spelling strategy (Henderson, 1985) and is cognitively appropriate for third graders. Scott (1993) suggested that clapping the syllables as they are spoken, encourages and reinforces further the recognition of the syllable segments as well as making syllabic segmentation fun. Syllabic segmentation demands that children look at the sound syllable units. It seems logical, then, to have this strategy next, that is, right after building new words from the root or base words by adding suffixes such as "ed," "ing," "er," and "est." This second strategy addresses auditory and visual discrimination. Integrating the use of the two senses may reinforce the new spellings especially for children who can not rely solely on visual learning.

To review, the children were expected to look at root or base words, build on to them with suffixes, and assimilate spelling rules. They were actively involved in looking at, saying, and clapping the sound segments of syllables. It seems wise, then, to conclude with a whole word approach like

visual imagery, in order to reintegrate orthographic knowledge of the words. This may also allow children to be more selective when focusing on each particular strategy since some children may learn to spell better using the sound segment approach where others may feel more comfortable with the whole word approach. Ehri (1980;1982, cited in Glenn & Hurley, 1993) found that children will consult their visual orthographic images during their first through third years of reading instruction to determine if a word looks right. Appropriate strategies can help children to develop and call upon these stored images. Visual imagery can help students to remember the spellings of newly learned words (Sears & Johnson, 1986; Radaker, 1963).

The three strategies, combined, may have a greater effect in creating orthographic images for the subjects in the study. The deliberate and careful use of these three strategies by the third grade students may encourage the consistent approach towards standardized spelling.

One final practice strategy may ensure that the spelling words become committed to memory or become visual orthographic images. A whole word approach, where the students must say aloud, spell aloud, and then say each word aloud again, is a good practice strategy which, more importantly, shows the children how well they used the previous three learning strategies.

Variations of this traditional whole word approach have been described by Woloshyn and Pressley (1990) and Glenn and Hurley (1993).

Spelling strategies for educated and alert teachers are tools that can improve children's spelling. Just as whole language is believed to empower children to write with a greater sense of purpose, spelling strategies, it is believed, give children the skills and confidence to write more accurately. This in turn encourages a better quality of independent authorship.

## Summary

In this chapter, whole language was described as an appropriate setting for spelling instruction. Whole language allows for the natural development of spelling because it provides opportunities for numerous meaningful writing experiences. As a result, teachers are more likely to observe the genuine spelling abilities of the children which in turn allows for more accurate assessment of spelling needs.

Spelling strategies were described as an effective way of directing, encouraging, and even empowering children to become independent spellers. The research illustrated that explicit strategy instruction and the whole language environment are both beneficial to learners. Although they may

seem to be as different as water and oil to some educators, they do in fact appear to complement one another.

# CHAPTER THREE: METHODOLOGY

## Introduction

This chapter describes the procedures that were used to determine the effectiveness of explicitly teaching third grade students to use spelling strategies in order to improve their spelling performance and achievement. Traditional and whole language settings, as independent variables, provided the conditions for further comparisons. Descriptions of the subjects and how they were divided into experimental and control groups are provided along with an explanation of the assessment tools.

This chapter also includes a description of the lesson plans which focus on the use of three specific spelling strategies and a practice strategy by the two experimental groups. An analysis of the data follows and limitations of the study are discussed. A summary reviews the chapter contents.

## Subjects

The population for this study was 43 third grade students at St. Alfred School. Their ages ranged from 8 to 9 years. Initially, there were 15 third grade students in the split Grade 3/4 class and 28 students in the straight Grade 3 class.

Most of the 43 students spoke English as their first language. For seven of the students, Greek, Spanish, or Polish was their first language, with some of these children and their families being new immigrants (i.e., within 1- 4 years). In the end, 37 students were able to participate because they spoke English proficiently and because parental consent was obtained.

There was a varied socio-economic background which included parents who were unemployed, those who were skilled labourers, some were professionals, and some owned or managed businesses. In all, two classes, one teacher, and one educational assistant participated in this study with the consent of the principal and the director of education. However, only the teacher conducting the study administered the training sessions to both experimental groups as well as the pretest and posttraining tests to all three groups to ensure consistency.

Materials

Canadian tests of basic skills. Test L-1: Spelling for Level 9, from the Multilevel Edition/Levels 9-14/Form 5 (1982) booklet was used to assess students' spelling abilities according to grade level. This test was designed for third grade students or for the average 8-9 year old child. It was

administered first as an auditory test and then as a test of visual discrimination.

The first test was administered about a week before the study began in the form of a spelling dictation test and again just a day or two before the study began as the visual discrimination test that it is. For the first test, each of the words in the 30 units was dictated. There was a total of 120 words. The students printed each word after it was stated, used in a sentence, and restated. For example, the teacher stated for the word "slow," "slow ... Please slow down or you will make a mistake ... slow" (Appendix A). The subjects used the prepared answer sheets (Appendix B). They were given a five-minute break half way through the tests.

Each group of four words was corrected as a unit, much like it is in its original form. One or more errors within a unit is a point lost. Grade equivalents could still be determined.

In the second test, students used visual discrimination to determine spelling correctness. Two sample questions were done with the students. Each question had five answers from which the students were to choose the correct response such as in the following: "1. fire, 2. rane, 3. most,

4. baby, 5. (No Mistakes)." The students were instructed to find the word that was spelled incorrectly or recognize that all words were spelled correctly. Since the second answer is incorrect, the students printed the number "2" in the appropriate blank for that particular question on the answer sheet provided (Appendix C). If there had been no errors, the number "5" would have been printed in the blank. The students had twelve minutes to complete 30 questions.

The auditory and visual versions of this test were re-administered when the training ended to determine whether there was an improvement in the children's general spelling awareness using auditory and/or visual discrimination. More specifically, was there any improvement shown in the spelling of words not used in the five-day training sessions? Developmental, or grade-equivalent scores determined the students' level of spelling.

Spelling dictation. Five spelling dictations were given over the course of the study using the total spelling word list consisting of training and transfer words (Appendix D). Answer sheets were provided (Appendix E). This test was dictated to the two experimental and the control groups as a pretest a few days before the study began. Then immediate, two-week, six- week, and nine-week follow-up dictation tests were given.

Spelling words. The spelling word list consisted of 56 words: 39 training words and 17 transfer words (see Appendix F). The spelling words were chosen by the teacher conducting the study from the story, Cloudy With a Chance of Meatballs, by Judi Barrett. This story was used to begin the theme of Weather for the whole language groups (experimental and control).

Not all roots and derivatives were studied. Seventeen were selected to be transfer words in the spelling tests. These 17 words were used to demonstrate whether the children were able to apply the word building strategy.

The students in the traditional class did not study the 39 training words in the context of the story as did the whole language experimental group. These students did learn to spell the same designated words for each day by using the same strategies in a similar time frame. This group was also given the same spelling test which included the 39 training words and the 17 transfer words for the same purposes.

## Procedures

Group assignment. Participating students were assigned to one of three study conditions: strategy, whole-language-plus-strategy, or whole language. The 14 third grade students in the split grade 3/4 class formed the strategy

only group. The teacher of this class kindly agreed to continue using a traditional approach for the duration of the study even though there was strong evidence of movement towards a more integrated approach in that classroom.

Students in the straight Grade 3 class were randomly assigned to the whole-language-plus-strategy or whole-language-only groups. An attempt was made to divide these children equally according to gender and academic ability.

Students in the whole language condition were provided with numerous meaningful writing and reading experiences which are functional and recreational. The children are also exposed to individual, group, and whole class instruction. This instruction may be planned or there may be a few to several teachable moments which occur daily during the integrated blocks of time. For example, the students may have been given specific instruction on how to perform mathematical operations, how to create and solve their own mathematical problems, how to research in order to locate information, to label diagrams or for organizing project work. These lessons, along with whole group tasks and sets of activity cards which are often completed in the order chosen by individuals or groups of students, are all designed with a

specific theme in mind. Integration is quite clear to the students. Skills and concepts clearly relate to the current theme whenever possible. As the children work on their tasks, the teacher often scaffolds their efforts, encouraging them to become increasingly more self-reliant. Basically, a holistic approach is observed just as was described in the literature review.

Random assignment to the whole-language-plus-strategy group and the whole language group was done by an adult who did not know the children well. Some students had to be reassigned because too many high achievers had been placed in one group. In the end, each of these groups included some children who had been tested for giftedness, children who received resource aid, and those who attended communication classes in order to improve their expressive and receptive language. Some of the children spoke another language in their home, but they all spoke English proficiently. Each group also had children who participated in a social skills program. Overall, there was a wide range of abilities in these two groups.

The third graders forming the strategy only group in the split class ranged from fairly average to above average. No children in this class were tested for giftedness and none were in need of receiving special help. All these

students spoke mostly English in the home and were able to speak it proficiently.

The students needing more attention and resource aid were placed in the straight grade class at the beginning of the year. This would be more beneficial to the students needing extra attention as opposed to the confusion they might experience in a split class. Even though considerably weaker Grade Three students had been placed in the whole language classroom in September, pretests showed on the average that no significant difference existed among the three groups in early April when the study began.

This would allow for an adequate comparison of the use of spelling strategy instruction using words in context (whole language) and out of context (traditional setting). These two conditions were then compared with the control group where no spelling strategy instruction was given.
The students, however, knew only that they were assigned to letter groups: Group A (strategy only), Group B (whole-language-plus-strategy), and Group C (whole language only).

General treatment. The students in the strategy condition received spelling strategy instruction for the training words. The training words did not have a contextual basis in this condition. Daily spelling lessons were only 15-20

minutes in length. It has been noted by Woloshyn and Pressley (1990) that spelling instruction in excess of approximately 75-80 minutes per week does not have any greater effects on spelling development. Very simply, more is not better in this case.

All lessons focused on the straight-forward presentation of the training words along with the habitual and eventually skilful use of three spelling strategies: word building, syllabic segmentation, and mental imagery. Specifically, the students were told that they were going to learn how to spell certain words each day by using three spelling strategies. They were also told that a practice strategy would show them how well they used the three learning strategies.

First, the students were asked to note root or base words and to think of derivatives through the word building strategy. Second, they sounded out and clapped out the beats or syllables of the words for the day (syllabic segmentation). Finally, the students imagined that they were typing the words onto a computer screen or using black paint to print them on a white fence (visual imagery). The students then said each word carefully making sure to exaggerate the syllables, spelled the word, and then said the word carefully again.

Spelling was a separate subject for the strategy only group. The target words were not intentionally used in other learning activities. But, the study words remained posted in clear view for the duration of the training period.

Students in whole-language-plus-strategy were also given spelling strategy instruction on the training words. However, the words were presented in context. The same training words that were used for the strategy only condition, were related to the theme of weather. Chosen training words were in fact drawn from the chart story summary made by the students and teacher on the first day of the unit right after the reading of, Cloudy With a Chance of Meatballs, to the whole language experimental and control groups. The remaining designated training words were drawn from the same chart story on each of the four remaining training days. That is, the teacher gave a specific clue to the children so they could find the training word or its derivative in the chart story. The elicited words were developed using the word building strategy so that all the training words for that particular day would be posted on the spelling chart. These words were then studied with the understanding that three learning strategies would help them remember how to spell the words successfully.

The daily spelling lessons required the use of word building, syllabic segmentation, and mental imagery as in the strategy condition. The sessions were 15-20 minutes in length as well; however, the training words and their derivatives were used throughout the day in theme related activities. The students were expected and encouraged to spell these words correctly in all written work since these words were clearly displayed in the chart story and on the spelling word chart.

The control group (whole language only) was exposed to the same contextual learning as whole-language-plus-strategy, but spelling instruction was incidental. That is, there were no planned spelling lessons incorporating the explicit teaching of spelling strategies. Rather, when teachable moments arose, spelling instruction was given to individual students, groups and/or the whole class.

More specifically, as the students worked on a variety of activities, the teacher may have noticed that an individual or certain group of children seemed to be making the same spelling error repeatedly. This alerted the teacher, who then gave on-the-spot spelling instruction to those children experiencing difficulty with a certain word. These teachable moments may occur several times a day for each child and/or the class.

Incidental spelling lessons for the children in the whole language group consisted of reminders of a spelling rule. They were reminded to drop the final "e" in a word before adding "ed" or "ing." This occurred no more than once or twice each day for that class during the five-day study. Misspelled words (training and other) were also pointed out to individual children for the purpose of correction, during conference sessions. The students were told to refer to the story and spelling charts for the correct spelling. However, there was no explicit spelling strategy instruction given during the regular activity times throughout the day.

The strategy only group was given spelling strategy instruction in their classroom first each morning by the teacher conducting the study. Then the whole-language-plus-strategy group received spelling instruction in their own classroom.

At this time, the whole-language-only group was in another room with the educational assistant. These students listened to theme related stories and did theme related activities which involved the use of some of the study (i.e., training or transfer) words. These lessons (Appendix G) were also 15-20 minutes in length. They re-entered their classroom when the spelling training session for the whole-language-plus-strategy condition was

completed. They resumed working on the same whole language activities while under the direction of the same teacher.

Classroom procedures for the strategy condition. Each day, the strategy only group in the split Grade 3/4 class received their spelling instruction first thing in the morning. The fourth grade students left the classroom for the duration of the spelling instruction.

On the first morning, the children were told that they would be using strategies all that week to learn how to spell specific words. There was a brief discussion of what a strategy is and its purposes. The four strategies were listed on a poster and kept on the blackboard in plain view for each spelling session. The teacher and the students read the names of the three learning strategies together: "Word Building," "Sounding Out" (syllabic segmentation), "Imagine" (mental imagery), and the "Say-Spell-Say Practice Strategy." The children were told very clearly that the first three strategies were learning strategies.

More specifically, the students were told that the word building strategy would help them to learn and remember the root words, suffixes, and spelling rules. The sounding out strategy would help them to learn and remember how to spell the parts of the words. The imagine strategy would help them to

form a picture of each whole word in their minds, a picture they could call upon when they needed the spelling. They were also told that if they used these strategies carefully, they would easily learn how to spell all the words and they would also remember how to spell them for a long time.

A training word for the day was printed on the spelling word chart. For example, one of the training words was "chew." Students were told that the first strategy, word building, would help them make a new word, a derivative. The derivative was elicited from the students by orally providing a fill-in-the-blank sentence such as the following; "You are always _____ gum in school." This procedure was used on each of the designated training words for a particular day (Appendix F).

As the responses were correctly given, the teacher printed the words on the word chart. Students were asked to note any similarities in the words (e.g., suffixes) and the teacher underlined those similarities. In addition to suffix endings, the children also learned or reviewed the rules such as dropping the final "e" before adding "ed" or "ing," and changing "y" to "i" before adding "er," or "est." They also learned that some words are irregular and do not follow the established patterns discussed (e.g., buy - bought; fly - flew).

The strategy group was told that they were finished using the word building strategy and that they were ready to use the next strategy called "sounding out" (syllabic segmentation). The students repeated the words one at a time after the teacher. The teacher pointed to and said each word carefully so the students could clearly hear the units of sounds (syllables) while looking at the word and could easily repeat them. For example, the word "chewing" would be stretched out like this, "chew-----ing." This was done for each training word listed for the day. The students again repeated the words after the teacher, but further emphasis was made by clapping out each sound unit in a rhythmic fashion using a side to side swaying motion so the sound units were exaggerated. The children were then told that they finished using the word building and sounding out strategies. They were ready to use the last learning strategy called "imagine" (visual imagery).

The students were instructed to look carefully at every letter in the word. The next step was to close their eyes and imagine typing first the root word and then each of the derivatives onto a computer screen or using black paint to print the words onto a huge white fence. The students were instructed to look at the next word and imagine seeing it in their minds on the computer

screen or on the fence. The students would continue until they had used this strategy on all of the words for that day.

The students were told that they had finished using the three learning strategies (teacher pointed to and read the strategies). Finally, they were told that they would use the practice strategy called "say-spell-say" to find out how well they used the other three strategies. Successfully spelling the words meant successful use of the spelling strategies. The students turned away from the word list and proceeded to spell each word aloud. Specifically, the children repeated each word, stressing the syllables, they spelled the word out loud together, and then said the word again in syllables.

Once all three of the learning strategies (word building, syllabic segmentation, and mental imagery) and the practice strategy had been used, the students recorded the words in their spelling notebook. The students in this condition would then go on to unrelated studies. They did make spelling corrections in their work throughout the day whenever instructed by their own teacher. They also worked on spelling units in The Canadian Spelling Program II for Grade Three (Thomas & Scott, 1987).

Classroom procedures for whole-language-plus-strategy and whole language. The whole-language-plus-strategy and whole language groups helped to prepare a chart story summary of Cloudy With A Chance of Meatballs by Judi Barrett (Appendix H) on the first day of the weather theme. The chart story was used for the duration of the training period. Readability of this chart story was estimated at approximately Grade 4.5 according to the Flesch-Kincaid system in Microsoft Office. Grade level is determined on the average number of syllables per word and the average number of words per sentence. The chart story was suitable for all the students and sufficiently challenging for many.

Choral reading of the chart story was done as soon as it was completed and on the following four days of the training period. Choral reading was done as a whole class each day. Groups of children read sections of the summary for variety and to model expressive, fluent reading.

At this point, that is, after the chart summary had been read, the whole language group left with the educational assistant to follow their lesson plan. The whole-language-plus-strategy group then received explicit spelling

strategy instruction using the training words (Appendix F) that were used earlier that day with the strategy only group.

As before, the teacher gave a clue in order to elicit the training word or its derivative if the root word was not in the chart story. The children in this condition had to locate the word in the chart summary. The students were told in what paragraph the word was located and a definition of the word was also provided. A student volunteered the answer, another student underlined the word when it was found in the chart story, and a third student would spell the word as the teacher printed it on the word chart.

The students were then told that they were going to use the three strategies of "Word Building," "Sounding Out" (syllabic segmentation), and "Imagine" (mental imagery). These strategies, as well as the "Say-Spell-Say," practice strategy were posted on the blackboard from the beginning of the spelling instruction until its conclusion. The teacher and students read the poster together just as the strategy group did. This group was also told that the first three strategies would help them to learn and remember the spellings of all the words in the spelling lessons for that week. The purpose of the practice strategy was also clarified.

The students were told that first they would use the word building strategy. As for the strategy group, fill-in-the-blank sentences were provided in order to elicit each of the derivatives. These words were printed on the word chart. Students here also noted similarities such as roots and suffixes which were underlined (i.e., "ed," "ing," "er," and "est") and the related spelling rules were discussed as in the first experimental group.

The same procedure was used for the remainder of each spelling training session. The three learning strategies and the practice strategy were always named and their purposes reviewed daily in an explicit manner just as for the strategy only group. The whole-language-plus-strategy students then recorded the words for the day in their Word Books. Upon completion of the spelling lesson, the whole-language-plus-strategy group would go on to the integrated activities with the whole language only group, which was the other half of the class.

## Data Analysis

The Canadian Tests of Basic Skills: Test L-1: Spelling for Level 9 was administered to determine adequate placement of subjects to groups. Posttests were compared to determine if general spelling performance had been affected by the short training period.

Training, transfer, and total words were analyzed. This was done for the pretest and the four posttest measures of all three groups in order to determine whether or not training using explicit spelling strategy instruction significantly influenced the spelling performance and achievement of the two experimental groups (whole-language-plus-strategy and strategy only).

## Limitations and Internal Validity

One possible limitation of this study is that the students in the whole language class have had prior experience using the word building and sounding out strategies from the beginning of the school year whenever they had incidental spelling lessons. However, the students did not use the strategies as intensely, nor were the strategies presented or used as explicitly as they were in this study.

Whole-language-plus-strategy did not use a spelling text at any point during the year. Spelling instruction as a class occurred only during the designated 15-20 minutes. Prior exposure to the strategies may be an advantage to this group, but the traditional class was also receiving spelling instruction throughout the year from their own teacher. This class typically used a spelling text which investigated word building and syllabication among other spelling tools. Those strategies were also not as explicitly

taught or used as intensely during regular class time as they were during the study. Neither group can be truly seen to have had an advantage over the other as they appear to have experienced a fairly equal amount of exposure to similar spelling strategies. One difference is that the whole language spelling lesson was mainly oral with students making immediate application of a spelling rule. The traditional group wrote out spelling exercises from spellers.

Finally, the five-day training period may be construed as a very short treatment period for a study. However, the results demonstrated that strategy instruction could influence spelling performance even after five days.

The data collection was conducted by only one person, the teacher who provided the training. Both experimental groups and the control group were given the same amount of time to complete all forms of testing. In addition, the dictated words were enunciated carefully and in the same way so that only the outcome of strategy instruction, or the lack of it, could be observed in the resulting data. Therefore, an implementer threat was also unlikely since a special effort was made to present consistency throughout the study.

There did not appear to be a testing threat. That is, it is unlikely that the students were able to study the training and transfer words from the pretest in

preparation for later tests. The students did not know at that time that more tests using the same words would follow. Since the tests were collected and not returned, they would have nothing from which to study. In addition to this, there was no feedback on their individual or group performances.

Treatment of all subjects was deliberately similar as much as possible. The data collector did know, however, to which condition students were assigned. Regardless, bias is unlikely to have influenced the development of any negative or positive outcomes. Dictated spelling words could only be marked as correct or incorrect. All instrumentation dealt with factual information that resulted in raw scores which were then manipulated to find other descriptive values.

The person conducting the study admittedly did have a personal bias. There was the hope that strategy instruction would show greater improvements in the spellings of the two experimental conditions than in the control group. Further, it was hoped that the whole-language-plus-strategy group would surpass the efforts of the other two groups. However, the greatest concern to this author was, "Would one of the conditions truly prove to be superior as the result of systematic experimental research?" Personal feelings had to be put aside and a conscious effort was made to conduct the

study in a fair, impartial, scientific manner in order to obtain valid data that could provide some helpful insight into how children best learn to spell.

The Hawthorne Effect may have been in place. The students in the two experimental groups knew that they were going to learn how to spell better. They were told explicitly that this was the purpose of the strategy instruction. As a result, the two groups may have been unusually more attentive than the control group.

However, the control group apparently also perceived themselves as recipients of special treatment. They clearly felt privileged in leaving the room with their favourite educational assistant. They were happy and eager to go with him each day and did not at all look as though they felt left out. The experimental group that remained with me for the spelling lessons also exhibited great pleasure at staying behind and participated with enthusiasm.

The other experimental group (strategy only) may have felt that they were being treated in a special manner. They seemed very pleased to have the researcher come into their classroom for the duration of the study. They often asked when the researcher would be coming in to visit again or when they would have another test. Although this group initially appeared to be too inhibited to participate in an enthusiastic manner, they became just as

lively and open on the second day of the study as the whole-language-plus-strategy students. Perhaps they became more comfortable with the researcher as the visiting teacher, even though we had had several friendly interactions in the playground at recesses. Also, they may have felt assured that the researcher was really just visiting. Even though they exhibited great pleasure in participating in the study, they would want their current teacher, whom they loved and respected, to return. Usually, by the spring, primary children have developed a very strong attachment to their teachers and see them almost as their personal "possessions."

All the subjects were given candy on two occasions and a doughnut and a drink on another day solely as a thanks for participating in the study. There were no implications made that the treats were rewards for ability and/or performance of any kind. The Hawthorne Effect may have been in place for the students in all three conditions, for they appeared to feel equally special and cared for. It is understood that the conclusions from this study may not be generalized to other populations, but the implications and questions resulting from this study may be noteworthy.

## Summary

In this study, the students in the experimental groups were exposed to explicit spelling strategy instruction using either words in or out of context. Specifically, the word building, syllabic segmentation, and mental imagery strategies were taught in order to improve the spelling performance and achievement of each experimental group. These spelling strategies were implemented daily for five days using the training words in 15-20 minute spelling sessions. The students demonstrated how effective these learning strategies were by immediately using the say-spell-say practice strategy at the conclusion of each session.

The Canadian Tests of Basic Skills (auditory and visual) and a spelling dictation test were used to compare the achievements of the two experimental groups and the control group. Measuring improvements in spelling by comparing pretest and posttest assessments might indicate which condition improves spelling performance the best. Although the subjects were few in number, the implications arising from this study may be helpful in designing the best educational approach to learning how to spell and write.

# CHAPTER FOUR: RESEARCH FINDINGS

## Introduction

The results of the study are reported in this chapter. The primary analyses consisted of the spelling dictation test scores, namely performance scores for training and transfer words. Secondary analyses consisted of students' performance scores on the Canadian Tests of Basic Skill (visual and auditory subscales).

### Spelling Dictation Data (Training Words, Transfer Words, and Total Words)

For these data, a 3(condition) by 5(time) ANOVA with repeated measurement on the last variable was performed on each of the dependent measures (i.e., training, transfer, and total words). The Tukey Kramer procedure was used for posthoc analysis (Kirk, 1982). The means and standard deviations for each dependent measure are listed in Table 1 as a function of time and experimental condition.

Training words. The main effect for condition was not significant ($F$ [2, 34] = 1.18, $MSe$ = 413.77, $p$>.05). The main effect for time and the interaction effect between condition and time, however, were significant ($F$ [4, 136] = 84.79, $MSe$ = 7.86, $p$<.001 and $F$ [8, 136] = 4.89, $MSe$ = 7.86,

Table 1.
Means and standard deviations for pretest, immediate, 2-week, 6-week, and 9-week dictated spelling test performances as a function of word type and experimental condition: *Training Words, Transfer Words, and Total Words.*

| | Whole Language + Strategy | Strategy Only | Whole Language Only |
|---|---|---|---|
| Test | | Training | |
| Pretest | | | |
| M | 18.17 | 16.15 | 17.75 |
| SD | 8.94 | 7.34 | 11.93 |
| Immediate Posttest | | | |
| M | 31.33 | 29.54 | 23.08 |
| SD | 9.15 | 5.71 | 12.87 |
| 2-Week Posttest | | | |
| M | 29.17 | 25.62 | 21.67 |
| SD | 8.72 | 5.78 | 12.58 |
| 6-Week Posttest | | | |
| M | 29.42 | 25.77 | 23.42 |
| SD | 8.22 | 5.90 | 12.35 |
| 9-Week Posttest | | | |
| M | 29.75 | 27.23 | 23.50 |
| SD | 9.17 | 6.26 | 12.38 |
| number of subjects | 12 | 13 | 12 |

(table continued)

| | Whole Language + Strategy | Strategy Only | Whole Language Only |
|---|---|---|---|
| Test | | Transfer | |
| Pretest | | | |
| M | 7.17 | 6.62 | 6.67 |
| SD | 3.74 | 3.50 | 5.60 |
| Immediate Posttest | | | |
| M | 13.25 | 10.62 | 8.75 |
| SD | 4.14 | 2.85 | 5.53 |
| 2-Week Posttest | | | |
| M | 11.50 | 10.54 | 8.83 |
| SD | 4.95 | 2.44 | 5.64 |
| 6-Week Posttest | | | |
| M | 11.50 | 10.08 | 9.25 |
| SD | 4.42 | 3.45 | 5.80 |
| 9-Week Posttest | | | |
| M | 11.92 | 9.31 | 9.67 |
| SD | 4.14 | 3.33 | 5.76 |
| number of subjects | 12 | 13 | 12 |

(table continued)

| | Whole Language + Strategy | Strategy Only | Whole Language Only |
|---|---|---|---|
| Test | | Total | |
| Pretest | | | |
| M | 25.33 | 22.77 | 24.42 |
| SD | 12.31 | 10.59 | 17.43 |
| Immediate Posttest | | | |
| M | 44.58 | 40.15 | 31.83 |
| SD | 13.22 | 8.04 | 18.18 |
| 2-Week Posttest | | | |
| M | 40.67 | 36.15 | 30.50 |
| SD | 13.59 | 7.73 | 18.03 |
| 6-Week Posttest | | | |
| M | 40.92 | 35.85 | 32.67 |
| SD | 12.49 | 9.31 | 18.01 |
| 9-Week Posttest | | | |
| M | 41.67 | 36.54 | 33.17 |
| SD | 13.30 | 9.13 | 18.01 |
| number of subjects | 12 | 13 | 12 |

$p<.001$). For *pretest,* the posthoc analyses revealed no significant differences between the three study conditions (largest $q = 2.55$, $p>.05$). For the *immediate posttest,* students in the whole-language-plus-strategy and strategy conditions outperformed those in the whole language only condition ($q = 9.16$, $p<.01$ and $q = 7.31$, $p<.01$). Students in the whole-language-plus-strategy and strategy conditions did not differ significantly in their performance scores ($q = 2.03$, $p>.05$).

For *two-week* follow-up, students in the whole-language-plus-strategy condition outperformed students in the strategy and whole language conditions (smallest $q = 4.02$, $p<.01$). Students in the strategy condition also exceeded those in the whole language conditions ($q = 4.38$, $p<.01$).

At the *six-week* follow-up, performance scores of students in the whole language plus strategy condition were significantly better than those in the strategy condition ($q = 4.51$, $p<.01$) and those in the whole language condition ($q = 7.56$, $p<.01$). Students in the strategy condition performed significantly better than those in the whole language condition ($q = 2.96$, $p<.05$).

For *nine-week* follow-up, students in the whole-language-plus-strategy condition outperformed those in the strategy and whole language conditions

(q = 2.95, p<.05 and q = 7.17, p>.01). Students in the strategy condition also outperformed those in the whole language condition (q = 4.14, p<.01).

Transfer words. The main effect for condition was not significant (F [2, 34] = .99, MSe = 90.92, p>.05). The main effect for time was significant (F [4, 136] = 49.51, MSe = 2.06, p<.001), as was the interaction effect between condition and time (F [8, 136] = 4.13, MSe = 2.06, p<.001).

The Tukey Kramer procedure revealed no significant *pretest* differences between the three study conditions (largest q = .95, p>.05). For the *immediate posttest*, students in whole-language-plus-strategy condition did significantly better than those in the strategy and whole language conditions (q = 6.36, p<.01 and q = 11.08, p<.01). Students in the strategy condition outperformed those in the whole language condition (q = 4.59, p <.01).

For *two-week* follow-up, there was no significant difference between the students in the whole-language-plus-strategy condition and those in the strategy condition (q = 2.32, p>.05). The performance scores in the whole-language-plus-strategy condition exceeded those in the whole language condition (q = 6.56, p<.01). Students' scores in the strategy condition exceeded those in the whole language condition (q =4.20, p<.01).

For *six-week* follow-up, students in whole-language-plus-strategy

condition did significantly better than students in the strategy condition (q = 3.43, $p < .05$). Whole-language-plus-strategy students also did significantly better than those in the whole language only condition (q = 5.54, p<.01). Strategy students were not significantly better than whole language students (q = 2.04, p>.05).

For *nine-week* follow-up, whole-language-plus-strategy students outperformed both whole language and strategy students (q = 5.54, p<.01) and q = 6.30, p<.01). There was no significant difference between the strategy and whole language conditions (q = .88, p>.05).

Total words. The main effect for condition was not significant (F [2, 34] = 1.12, MSe = 884.27, p>.05). The main effect for time and the interaction effect between time and condition were significant (F [4, 136] = 97.20, MSe = 13.11 and p<.001, and F [8, 136] = 5.26, MSe =13.11, p<.001).

There were no significant differences at *pretest* among the three groups (whole-language-plus-strategy versus whole language, q = 0.89; whole-language-plus-strategy versus strategy, q = 2.54; and whole language versus strategy, q = 1.63). For the *immediate posttest*, significant differences were found. Students in the whole-language-plus-strategy condition scored higher than those in the strategy only condition (q = 4.31, p<.01) and those in the

whole language condition ($q = 12.64$, $p<.01$). The students in the strategy condition outperformed those in the whole language only condition ($q = 8.25$, $p<.01$).

For *two-week* follow-up, students in the whole-language-plus-strategy condition did significantly better than those in the strategy condition ($q = 4.41$, $p<.01$). The whole-language-plus-strategy scores exceeded those of whole language ($q = 9.81$, $p<.01$) and strategy scores exceeded those of the whole language condition ($q = 5.59$, $p<.01$).

For *six-week* follow-up, students in the whole-language-plus-strategy condition did significantly better than both those in strategy ($q = 4.95$, $p<.01$) and the whole language conditions ($q = 7.89$, $p<.01$). Strategy students did significantly better than whole language students ($q = 3.10$, $p<.05$).

For *nine-week* follow-up, the whole-language-plus-strategy students outperformed the strategy students ($q = 5.01$, $p<.01$) and the whole language students ($q = 8.13$, $p<.01$). Strategy only students performed significantly better than the whole language only students ($q = 3.29$, $p<.05$).

Canadian Tests of Basic Skills (Visual and Auditory Subscales)

The means and standard deviations resulting from the visual and auditory Canadian Tests of Basic Skills spelling tests are listed in Table 2 as a

function of time and experimental condition.

A 3(condition) by 2(time) ANOVA with a repeated measure on the last variable was carried out to determine whether the groups varied significantly for the visual and auditory forms of the test. For the visual form of the Canadian Tests of Basic Skills spelling test, the main effect for condition was not significant ($F$ [2, 34] = .47, $MSe$ = 2.23, $p$>.05). The main effect for time was also not significant ($F$ [1, 34] = 1.44, $MSe$ = .24, $p$>.05) nor was the interaction effect between time and condition ($F$ [2, 34] = .04, $MSe$ = .24, $p$>.05).

There were no significant differences for the auditory form of the Canadian Tests of Basic Skills spelling tests. The main effect for condition was not significant ($F$ [2,34] = .08, $MSe$ = 4.70, p>.05). The main effect for time was ($F$ [1, 34] = 11.20, $MSe$ = .11, p>.05). The interaction effect between condition and time was not significant ($F$ [2,34] = .12, $MSe$ = .11, p>.05).

## Summary

There were significant differences in students' spelling performances between both strategy conditions and the whole language condition for the dictated spelling tests (training, transfer words, and total words). In general,

Table 2.
Means and standard deviations for Canadian Tests of Basic Skills, Multilevel Edition/Levels 9-14/Form 5 (1982), Test L-1: Spelling for Level 9 pretest and posttest performances as a function of test type and experimental condition: *Visual and Auditory.*

| | Whole Language + Strategy | Strategy Only | Whole Language Only |
|---|---|---|---|
| Test | | Visual | |
| Pretest | | | |
| M | 4.04 | 4.39 | 3.98 |
| SD | 1.19 | .95 | 1.20 |
| Posttest | | | |
| M | 3.94 | 4.21 | 3.84 |
| SD | 1.14 | .88 | 1.28 |
| number of subjects | 12 | 13 | 12 |
| Test | | Auditory | |
| Pretest | | | |
| M | 2.75 | 2.55 | 2.75 |
| SD | 1.54 | 1.13 | 1.88 |
| Posttest | | | |
| M | 3.06 | 2.79 | 2.98 |
| SD | 1.78 | .95 | 1.85 |
| number of subjects | 12 | 13 | 12 |

the main effects for condition were not significant, but the main effects for time and the interaction effects between condition and time were significant. The spelling performances of the students in the whole-language-plus-strategy, strategy, and whole language conditions all improved over time (i.e., pretest to posttest). However, significant improvements were noted in the whole-language-plus-strategy condition over those in the whole language condition for every dependent measure and over the strategy condition for every dependent measure except on the immediate posttest (training words only). Students in the strategy condition performed significantly better than those in the whole language condition for every dependent measure except for the transfer words at the six and nine week follow-ups.

Students in each condition were also given the visual and auditory forms of the Canadian Tests of Basic Skills spelling test. The main effects for condition, the main effects for time, and the interaction effects between time and condition did not differ significantly for these tests.

# CHAPTER 5: SUMMARY, RATIONALE, AND IMPLICATIONS

## Discussion

### Summary

Third grade students were selected to participate in this spelling study. The purpose was to compare the effects of implementing explicit spelling strategy instruction in a whole language environment with one where there was only strategy instruction or only whole language instruction. The whole language only group acted as the control and received none of the explicit spelling strategy instruction to aid them in learning the study words.

The students in the two experimental groups and the control group were given the same spelling dictations at pretest and at immediate, two-, six-, and nine-week follow-ups. The students received explicit spelling strategy instruction daily in order to learn the training words during the five-day training period. Data analyses were carried out on the training, transfer, and total words. As postulated in the hypotheses, the two experimental groups quite consistently outperformed the whole language only group across all the dependent measures.

### Rationale

Theoretical reasons and personal rationalizations are presented here to

explain the results of this study. First, the variance for each of the three groups is discussed. Following that is a discussion about why the strategy instruction groups performed significantly better than the whole language only group. Also offered are possible reasons for why the whole-language-plus-strategy group's spelling performance was quite consistently superior to that of strategy only and whole language only. Finally, the results of the Canadian Tests of Basic Skills Spelling Test (visual and auditory subscales) are briefly discussed.

The strategy only group had the smallest variance for every dependent measure indicating the range of spelling ability for this group was narrower than the ranges for whole-language-plus-strategy and for whole language only. The standard deviations changed as a result of the study's training period of only five days. For every dependent measure, the strategy group's standard deviation was slightly smaller than at the onset of the study. For every dependent measure, the standard deviations for both the whole-language-plus-strategy and whole language only groups were slightly greater. This suggests to me, that explicit spelling strategy instruction alone is an effective way to provide spelling learning that will encourage uniform improvement in students' spelling performances.

The whole language only students were basically left to their own devices in comparison to the two experimental groups with respect to spelling strategies. The variance at pretest illustrates the wide range of abilities in this particular group. A large variance suggests that a variety of spelling strategies would be used by the students. Some strategies were effective while others were not. In five days, these students did learn to spell some of the words. Some students improved more than others. Perhaps the whole language only students showing the most improvement in this group were more independent and readily grasp new spellings. Perhaps these students were able to improve considerably in their spelling performance only as a result of exposure to the words in the chart story and in their required activities.

In any case, context and exposure were sufficient for these students. The students who generally experience difficulty spelling correctly received the same context and exposure. In contrast, however, these students showed very little or no improvement. These students may have benefited from more direct instruction. Because the varied needs of these students were not perhaps being met through strategy instruction, the variance for this group did not decrease.

Whole-language-plus-strategy students did have the direct instruction as well as offering context and repeated exposure to the study words. This approach provided all students with equitable chances at spelling improvement as well as allowing for some individual students to improve their learning further through repeated use of the words in relevant writing activities. This may explain why the variance was larger for the whole-language-plus-strategy group than for the strategy only group.

When looking at the spelling dictations, the whole-language-plus-strategy group performed significantly better than either the strategy only and whole language groups on every dependent measure with one exception. There was no significant difference on the immediate posttest (training words only) between whole-language-plus-strategy and the strategy only group. Strategy instruction proved to be a significantly effective tool for improving students' spelling performance when compared to whole language instruction. Gaskin and Elliot (1991) have stated that effective teaching consists of strategy use as well as making clear the rationale for why and when to use specific strategies. The rationale for strategy use, as well as the why and when, was made clear in the current study. Here, then, is one reason why the two

strategy groups made significant improvements while the whole language only group did not.

Mayer (1992) provided further support for the use of strategies as tools which enhance learning. In addition, Alderman (1990) explained that students feel more in control when they are taught to use effective strategies. Presumably, the strategy groups were equipped with confidence and the tools to learn and recall the study words in a systematic manner which resulted in significantly greater accuracy.

Case, Kurland, and Goldberg (1982) provided further rationale about why the strategy groups significantly outperformed the whole language only group. As the students systematically became more efficient in using the target strategies, the strategies required less cognitive attention. That is, the task of using strategies to spell became easier. Students become more efficient at using the strategies thus increasing their power to improve their spelling performances. The whole language only group was not afforded this benefit.

Block and Peskowitz (1990) explained that increased metacognitive awareness helps children to spell correctly. The two strategy groups knew that during the five days of the training period they would be expected to

make concerted efforts to learn to spell the target words. They were clearly told that, by using the presented strategies, they would improve their ability to spell and remember how to spell unfamiliar words. Their focus was on learning to spell the words through efficient strategy use. They were fully aware of their task and the conditions under which each spelling strategy was most effective. Pressley, Borkowski, and Schneider (1987) stated that in order to have effective strategy use, it is crucial for students to believe that their successes (in this case, correct spelling) are dependent on correct strategy use.

The whole language students' spelling awareness was not explicitly developed. They did not knowingly and deliberately focus on learning to spell and on remembering how to spell the study words. As a result, these students could not have developed metacognition about the study words and relevant spelling rules to the same degree as did students in the two strategy groups. In essence, they were left to their own devices. The significant differences in spelling performances between the strategy groups and whole language only group support the argument that systematic instruction is more effective than allowing for the natural development of spelling strategies.

The rationale provided thus far explains why the provision of explicit instruction about spelling strategies resulted in better spelling performance than whole language instruction alone. However, providing students with a meaningful study context in addition to strategy instruction is also an important element of effective instruction. The significantly better results of the whole-language-plus-strategy group in this study attest at least in part to this conclusion.

Smith (1975) supported contextual learning by stating that spelling performance is enhanced when spelling words are presented in context rather than when they are presented as a list unrelated to other studies. In this study, target words were presented to the whole-language-plus-strategy students in the context of a weather theme.

In the whole-language-plus-strategy condition, students' understanding of the words was reinforced when they integrated these words into relevant tasks. There was a clear connection made between the target words and the need to study them. That is, the students studied words that they needed to know in order to complete related reading and writing activities. This need was reinforced during each training day through the following activities:

reading the chart story as a class, focusing on spelling words taken from the chart story, and then using the words in oral and/or written activities.

The integration of the four basic strands of language (listening, speaking, writing, and reading) through a thematic presentation gave these students a relevant need for learning to spell. As a result, the whole-language-plus-strategy students were significantly more efficient in recalling the spellings. Bruner (1966), Denny and Ziobrowski (1972), Hasher and Clifton (1974), Mansfield (1977), Melkman and Deutsch (1977), and Worden (1976) all cited by Ceci and Howe (1978) supported the notion that primary students in particular learn best through thematic presentations.

Providing a context through a theme is one way to provide children with a working knowledge base. An extensive knowledge base can positively influence learning, and in particular, promote better understanding about the rules of oral and written language (Chi, Glaser, & Rees, 1982; cited in Recht & Leslie, 1988). For example, the students learned that adding "er" and "est" resulted in comparative forms of root words. The students read the chart story in which a comparative form of a target word could be used. This knowledge base provided a context and helped to reinforce their understanding about how to make comparatives. The related follow-up

writing activities further reinforced this learning in a meaningful manner. The whole-language-plus-strategy students in this study were indeed provided with a relevant context for the study words and they were involved in daily oral and written activities. The whole-language-plus-strategy group in essence had more practice time with the target words because the thematic approach demanded that these words be used in the many relevant writing experiences.

To this point, the discussion has clarified why the two strategy groups outperformed the whole language only group and why the whole-language-plus-strategy group was superior to the strategy only group. It may be noteworthy to further explore the reasons why the whole language only group showed only minimal improvement in their spelling performances.

Gentry (1984) observed that proficiency in spelling develops with maturity. Many children apparently learn to spell incidentally. Gentry (1984) pointed out that this is particularly so in a whole language environment where numerous meaningful writing experiences are provided. He did, however, observe that in order to learn and remember all the rules of spelling, as well as spelling irregularities, children needed the support of formal instruction.

Gentry's findings further support whole-language-plus-strategy instruction, but also provide a reason why the whole language only students showed at least minimal improvement in their spelling performance. These students were involved in many writing experiences. Throughout the year, the whole language groups frequently wrote using invented spellings. They were encouraged to be independent and to try to sound out words. This practice, coupled with the spelling modelled in the chart summary used in the study, may have helped some of the students to learn to combine their efforts with what they observed. This may have given the students the confidence to risk the spellings and experience at least a small degree of success. They were able to refer to the chart story for some help with spelling so they may have inadvertently learned the study word spellings.

But, because their learning was not done in a systematic and explicit manner, they were not as successful in spelling the words as were the two strategy groups. The whole-language-plus-strategy group, however, had the benefits of formal instruction, a meaningful context, and the repeated use of the target words in many relevant writing experiences combined with their determined efforts (resulting from strategy instruction) and individual observations.

The whole language only group did not receive explicit training, merely simple exposure to some of the study words and use of some or all of the words through the planned activities. In contrast, the strategy only group did receive explicit instruction on how to learn and remember the spellings, but they did not have the benefit of the presentation of words within a context. Strategy only students learned the rules but were not able to consistently transfer those rules to words that they did not receive training in perhaps because of the lack of context. Whole language students received the context, but they did not have explicit training with certain rules and when to apply those rules. As a result, they, too, were unable to make a transference of the known to the unknown consistently and correctly. To begin with, they were not sure of the "known."

Each group had what the other lacked. This may explain why there was no significant difference between these two groups at the six- and nine-week follow-ups on the transfer words and why the whole-language-plus-strategy condition, possessing what both other groups lacked, was superior across all dependent measures except for one. Whole-language-plus-strategy was the sum total of the other two groups. The benefits of this group provided the

best conditions for learning to spell in this particular study. Specifically, explicit spelling strategy instruction within a whole language program appears to bring about significant improvements in students' spelling performances.

The results of the Canadian Tests of Basic Skills Spelling Test did not reveal any significant differences for the auditory or visual subscales at posttest. Perhaps because the duration of the training period was only five days, the students were unable to transfer new learning to totally unrelated words. In addition, the focus of each study session did not relate directly to the words on this particular test. In any case, there may have been significant results had the training period been longer.

Implications For Practice

Students are able to acquire correct spellings more readily when provided with optimum learning conditions. These conditions include presentation of spelling words in a relevant context, the use of age appropriate spelling strategies, and the belief that using strategies will bring success. Strategy instruction encourages and reinforces memory development and improves recall (Mayer, 1992). Whole-language-plus-strategy instruction appears to encourage and reinforce memory development, improve recall, and perhaps

increases comprehension due to the inclusion of relevant context. Very simply, this means the use of explicit spelling strategy instruction within a whole language program, according to this study, is the best way to encourage students to learn to spell.

This study indicates that whole language alone only fosters the development of spelling to a limited degree. Strategy instruction brought greater results. Specifically, the strategies employed in this study were significantly effective when used in the whole language learning environment. When considering that only a five-day training session was used in this study, the results seem even more remarkable. It seems reasonable to assume that students who efficiently use spelling strategies in a whole language program for an entire year would not only improve their spelling, but would quickly become independent spellers.

Primary educators need to have a working knowledge of the stages of spelling development so they can more accurately assess the spelling needs of their students. Educators must know how to explicitly teach a variety of strategies that will help children to be more confident with and efficient at spelling. The strategies in this study were explicitly taught. That is, the students were told what strategies they were going to learn to use, why they

were learning the strategies, and when the strategies could be used. They also learned that making the effort to use the strategies correctly was necessary for success. Efficient strategy use, not ability, was the key to successful spelling.

Many educators expose students to spelling strategies through spellers. While some spelling workbooks do incorporate the use of spelling strategies which are age appropriate, students explore and practise the words provided in a list which most times do not relate to other studies in the class. Specifically, there is very little or no integration and context to make the spelling words genuinely relevant to the students. In addition, the spelling strategies are not genuinely taught in an explicit manner. It may be that some educators confuse instruction of spelling rules with explicit spelling strategy instruction.

Primary students need exposure to strategies. They also need to be taught explicitly how to use a few basic strategies that will promote independent learning. In addition, they need the context so clear connections can be made between correct spellings and the context for using them. Equally important is the provision of opportunities to practise using the words in meaningful writing experiences and using strategies (first in meaningful spelling lessons

under the expert direction of their teacher and then independently in meaningful reading and writing experiences).

Spelling textbooks can be a useful tool to support a spelling program that is primarily derived from the current thematic learning experiences provided for the students. However, when used alone, they provide very little or no relevant context from which the students can gain meaning. Improvement in spelling performance is, then, somewhat restricted.

Educators need to formally teach children how and when to use a number of strategies that are interesting and effective in improving spelling performance and achievement. The strategies must be used in the context of an educational environment that is stimulating and personally relevant to the child. A whole language program, according to this study, seems to be the best setting in which to implement explicit spelling strategy instruction in order to significantly improve spelling performance and achievement. Apparently, the onus is on the primary teacher to prepare children for future success in spelling literacy. Glenn and Hurley (1993) believed that primary teachers can facilitate spelling accuracy by deliberately incorporating certain strategies into their programs. Perhaps schools could place an even greater emphasis on the importance of enhancing spelling development in the

primary division by encouraging teachers to participate in more workshops with the purpose of developing creative, enjoyable ways to use specific strategies in a whole language setting.

Finally, although there were no significant between group differences when looking at the results of the Canadian Tests of Basic Skills Spelling Test (auditory and visual subscales), an interesting observation has been noted. When looking at the means which resulted from the visual spelling test, the strategy only group slightly outperformed both whole language groups. But, when looking at the auditory means, both whole language groups slightly outperformed the strategy only group. Perhaps this could be viewed as an indication that there could be a greater balance between auditory and visual spelling instruction. This may be an insignificant observation, however, it is interesting that the results of the whole language groups were the opposite to the strategy only group. Perhaps another study could explore auditory and visual learning in whole language and traditional learning environments in more depth and for a longer period of time in order to obtain substantial data.

Implications For Future Studies

The culmination of the current study brought several questions to mind.

They could be answered by conducting other studies. Future studies might consider a training period greater than five days to measure the effects of strategy instruction in whole language and traditional settings compared to whole language only, over a long-term basis. Replication of the current study would also be useful because such a small sample was used in this study. The use of a larger sample may provide more substantial information. Replication of this study in other grades would provide some helpful insight for understanding spelling development at other levels. Perhaps comparing the use of only a "spelling textbook approach" to explicit spelling strategy instruction in a whole language setting may also prove to be a worthwhile study. Such a study may help to establish the best role of spelling textbooks.

Regardless of the many questions that may be raised as a result of this study, the findings strongly suggest that explicit spelling strategy instruction combined with a whole language setting can significantly improve spelling performance and achievement in third grade students. This study is worthy of replication and corroboration for these findings may very well influence how spelling should be taught to all primary students.

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# Appendix A - 1

Spelling Dictation (C.T.B.S.) – Page 1 of 3

1. slow... Please slow down or you will make a mistake... slow.
2. name... Tell me your name... name.
3. thin... If you lose any more weight you will be too thin... thin.
4. today... Your project is due today... today.

5. dump... The bears were at the dump searching for garbage... dump.
6. rack... Put those wet clothes on the rack to dry... rack.
7. sharp... That knife is not sharp enough to cut the fresh bread... sharp.
8. mouth... Do you have something in your mouth?... mouth.

9. hive... The bees came buzzing out of the hive... hive.
10. fame... Will fame come to you because of the good you have done?..fame.
11. pay... If you do the work I will pay you ten dollars... pay.
12. sang... We sang such a lovely song... sang.

13. clear... Please clear your table... clear.
14. which... Do you know which house she lives in?... which.
15. roar... The lion will roar when he sees the mouse... roar.
16. bank... Put the money in the bank... bank.

17. plan... Your plan is too confusing... plan.
18. blew... They blew big bubbles with their gum... blew.
19. raft... The raft fell apart when they were in the middle of the pond... raft.
20. saying... I can't hear what you are saying... saying.

21. path... We walked down the right path... path.
22. felt... We felt sad after listening to the story... felt.
23. wall... A beautiful picture was hung on the wall... wall.
24. spy... Would you like to be a spy?... spy.

25. meat... The meat was delicious... meat.
26. noon... We will eat at noon... noon.
27. stove... Something is cooking on the stove... stove.
28. pump... I will help you to pump the water out of the boat... pump.

29. brave... Are you brave enough to save someone?... brave.
30. alive... We are alive and healthy... alive.
31. oak... This acorn came from that oak tree... oak.
32. think... I will think of a good answer... think.

33. chalk... Use the coloured chalk on the blackboard... chalk.
34. bench... Please sit on the bench with me... bench.
35. gift... That sweater will make a lovely gift... gift.
36. job... What kind of job do you have?... job.

37. rain... The rain will help the flowers to grow... rain.
38. lazy... We feel too lazy to work today... lazy.
39. glad... I am so glad to see you again... glad.
40. crust... You should eat the crust of the bread also... crust.

# Appendix A - 2

C.T.B.S. – Page 2 of 3

41. pond... Don't swim in that pond... pond.
42. turned... The frog turned into a prince... turned.
43. talked... I talked to her last night... talked.
44. merry... We had a merry Christmas... merry.

45. cube... Please put one ice cube into my glass... cube.
46. filled... We filled in the hole... filled.
47. popcorn... We bought a large bag of popcorn at the show... popcorn.
48. toward... The little children ran happily toward the beach... toward.

49. gather... Let us gather together at church... gather.
50. hilly... The sheep ran across the hilly land... hilly.
51. trim... Please trim my hair... trim.
52. lives... Who lives in that house?... lives.

53. brass... The statue is made of brass... brass.
54. gulf... The boat sailed around the gulf... gulf.
55. tramp... It is fun to tramp through the snow... tramp.
56. trip... They went on a trip to Hawaii... trip.

57. cloth... Use that cloth to wipe the table... cloth.
58. note... Please write a note to explain what happened... note.
59. depart... Be sure to take your luggage when you depart... depart.
60. windy... It was so windy today that my hat blew away... windy.

61. lamb... The newborn lamb tried to stand up... lamb.
62. empty... The milk carton is empty... empty.
63. pocket... There is a frog in your pocket... pocket.
64. elm... Who cut down that beautiful elm tree?... elm.

65. colt... The colt was not strong enough to have a rider... colt.
66. candy... Too much candy will ruin your teeth... candy.
67. upon... Once upon a time there was a magic unicorn... upon.
68. again... Do not do that again... again.

69. around... We walked all around the yard... around.
70. water... The water was too deep to wade in... water.
71. missed... I missed the ball every time it was thrown... missed.
72. uncle... Is your uncle going to coach the baseball team?... uncle.

73. morning... I woke up very early this morning... morning.
74. wild... Let's look for wild animals in the jungle... wild.
75. chew... Be sure to chew your food carefully... chew.
76. spray... Will you spray the plants with water?... spray.

77. brightest... Try to find the brightest light in the sky... brightest.
78. flying... Have you ever seen a flying squirrel?... flying.
79. bark... You should not cut into the bark of a tree... bark.
80. nail... Please bring a hammer and one nail to me... nail.

# Appendix A - 3

C.T.B.S. -- Page 3 of 3

81. folks... All the folks came to the dance in town... folks.
82. gym... We like to use the parachute in the gym... gym.
83. jaws... My jaws are sore from chewing the bubble gum... jaws.
84. slap... Why did you slap your knee?... slap.

85. patch... There is a strawberry patch in the field... patch.
86. song... We heard a lovely song on the radio... song.
87. silver... The silver ring was lost outside... silver.
88. pitch... Will you pitch the ball to me?... pitch.

89. someday... We will be famous someday... someday.
90. burn... You will burn if you stay in the sun too long... burn.
91. oil... There was another oil spill in the ocean... oil.
92. free... You may have two free tickets... free.

93. comb... I need to comb my hair... comb.
94. either... You must either do this or that... either.
95. exact... That is the exact answer... exact.
96. ground... Let's dig up the ground to find the treasure... ground.

97. flakes... Large flakes of snow fell gently to the ground... flakes.
98. darkness... He walked off into the darkness all alone... darkness.
99. posters... There were many posters on the wall... posters.
100. throne... The king and queen each have a throne made of gold... throne.

101. colour... Blue is my favourite colour... colour.
102. rang... The telephone rang loudly... rang.
103. lump... I would like one lump of sugar, please... lump.
104. gain... You will gain weight if you eat too much... gain.

105. knife... The knife is very sharp... knife.
106. hind... The dog hurt its left hind leg... hind.
107. batch... Let's make another batch of cookies... batch.
108. sheet... I need another sheet of paper... sheet.

109. pain... Do you have a pain in your leg?... pain.
110. list... Give me a list of those names... list.
111. hush... There was a sudden hush over the crowd... hush.
112. rough... That is a rough game... rough.

113. shot... They each had one shot at the basket... shot.
114. flame... One large flame shot out from the fire... flame.
115. bold... It was very bold of you to speak out like that... bold.
116. holiday... I think I need a holiday to celebrate... holiday.

117. extra... You may put extra sugar on your cereal today... extra.
118. spoon... Use a spoon to eat your ice cream... spoon.
119. spare... I need a new spare tire... spare.
120. nation... We belong to the nation of Canada... nation.

# Appendix B - 1

Name_____ Group_____ Date_____

Answer Sheet (Canadian Tests of Basic Skills-Auditory Test-Page 1 of 2)

1_____ 2_____ 3_____ 4_____

5_____ 6_____ 7_____ 8_____

9_____ 10_____ 11_____ 12_____

13_____ 14_____ 15_____ 16_____

17_____ 18_____ 19_____ 20_____

21_____ 22_____ 23_____ 24_____

25_____ 26_____ 27_____ 28_____

29_____ 30_____ 31_____ 32_____

33_____ 34_____ 35_____ 36_____

37_____ 38_____ 39_____ 40_____

41_____ 42_____ 43_____ 44_____

45_____ 46_____ 47_____ 48_____

49_____ 50_____ 51_____ 52_____

53_____ 54_____ 55_____ 56_____

57_____ 58_____ 59_____ 60_____

# Appendix B - 2

Name_____ Group_____ Date_____

Answer Sheet (C.T.B.S.-Auditory Test-Page 2 of 2)

61_____ 62_____ 63_____ 64_____

65_____ 66_____ 67_____ 68_____

69_____ 70_____ 71_____ 72_____

73_____ 74_____ 75_____ 76_____

77_____ 78_____ 79_____ 80_____

81_____ 82_____ 83_____ 84_____

85_____ 86_____ 87_____ 88_____

89_____ 90_____ 91_____ 92_____

93_____ 94_____ 95_____ 96_____

97_____ 98_____ 99_____ 100_____

101_____ 102_____ 103_____ 104_____

105_____ 106_____ 107_____ 108_____

109_____ 110_____ 111_____ 112_____

113_____ 114_____ 115_____ 116_____

117_____ 118_____ 119_____ 120_____

# Appendix C

Name: _____ Group: ____ Date: _____

**Sample 1. _____** **Sample 2. _____**

Answer Sheet (C.T.B.S.–Visual Spelling Test)

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____
25. _____
26. _____
27. _____
28. _____
29. _____
30. _____

# Appendix D - 1

*Spelling Dictation (Training and Transfer Words) -- Page 1 of 2*

1. chew ... Chew your food carefully ... chew.
2. remove ... Please remove your muddy boots ... remove.
3. damage ... There was much damage done to the roof ... damage.
4. package ... Take the paper out of the package ... package.
5. weigh ... How much do you weigh now? ... weigh.

6. prepare ... It is your turn to prepare the supper ... prepare.
7. refrigerate ... You should refrigerate that after opening it ... refrigerate.
8. cloud ... That cloud has the shape of a castle ... cloud.
9. rain ... The tropical plants need rain each day ... rain.
10. wind ... I heard the wind howling in the night ... wind.

11. snow ... We might see more snow tomorrow ... snow.
12. fog ... The fog made it difficult to see ... fog.
13. predict ... I predict that there will be rain all summer ... predict.
14. abandon ... If you abandon me I will be all alone ... abandon.
15. supply ... Who will supply the hotdogs for the picnic? ... supply.

16. fly ... That is a bird that can fly very quickly ... fly.
17. buy ... We will buy the house on the corner ... buy.
18. chewing ... I see that you are chewing more gum ... chewing.
19. removed ... They removed their shoes before entering the house ... removed.
20. damaging ... They are damaging the property of others ... damaging.

21. packaged ... The meat was packaged by the butcher ... packaged.
22. weighed ... We weighed our vegetables to find out the cost ... weighed.
23. preparing ... You are preparing the supper tonight ... preparing.
24. refrigerated ... The food was refrigerated to keep it from spoiling ... refrigerated.
25. cloudier ... It was cloudier today than yesterday ... cloudier.

26. rainy ... Let's have our meetings on rainy days only ... rainy.
27. windy ... Hold on to your hat on windy days ... windy.
28. snowier ... It is snowier on the top of the mountain ... snowier.
29. foggy ... It was too foggy to drive ... foggy.
30. predicting ... They were predicting rain on the weather report ... predicting.

# Appendix D - 2

Training and Transfer Words -- Page 2 of 2

31. abandoned ... Do not play in abandoned houses ... abandoned.
32. supplying ... You are always supplying the food for the picnic ... supplying.
33. flew ... The birds flew north for the spring ... flew.
34. bought ... We bought the cake at the bakery ... bought.
35. cloudiest ... There was no rain on even the cloudiest day ... cloudiest.

36. chewed ... The beaver chewed the bark off of the tree ... chewed.
37. removing ... Please make a habit of removing your muddy boots ... removing.
38. damaged ... The hail storm damaged the roof ... damaged.
39. packaging ... They are packaging the cereal in boxes ... packaging.
40. rainiest ... We played outside on the rainiest day of the year ... rainiest.

41. weighing ... I like weighing the vegetables at the grocery store ... weighing.
42. windier ... The trees only bend if it is much windier than this ... windier.
43. prepared ... He prepared breakfast for all of us ... prepared.
44. snowiest ... They went sledding on the snowiest day of the year ... snowiest.
45. refrigerating ... Are you refrigerating food when it is warm? ... refrigerating.

46. foggier ... It is much foggier down in the valley ... foggier.
47. cloudy ... You can still get a sunburn on cloudy days ... cloudy.
48. rainier ... It is rainier today than yesterday ... rainier.
49. windiest ... She lost her hat on the windiest day ... windiest.
50. snowy ... The snowy hills made a lovely picture ... snowy.

51. foggiest ... We drove down this road on the foggiest day ... foggiest.
52. predicted ... The weatherman predicted sunshine for tomorrow ... predicted.
53. abandoning ... They are abandoning the ship before it explodes ... abandoning.
54. supplied ... Who supplied the ice cream for the party? ... supplied.
55. flying ... I have seen a real flying saucer ... flying.
56. buying ... They are always buying tickets ... buying.

# Appendix E

Answer Sheet for Spelling Dictation (39 Training & 17* Transfer Words)

Name:_____ Group: _____ Date: _____

1_____ 2_____ 3_____

4_____ 5_____ 6_____

7_____ 8_____ 9_____

10_____ 11_____ 12_____

13_____ 14_____ 15_____

16_____ 17_____ 18_____

19_____ 20_____ 21_____

22_____ 23_____ 24_____

25_____ 26_____ 27_____

28_____ 29_____ 30_____

31_____ 32_____ 33_____

34_____ 35_____ 36*_____

37*_____ 38*_____ 39*_____

40_____ 41*_____ 42_____

43*_____ 44_____ 45*_____

46_____ 47*_____ 48*_____

49*_____ 50*_____ 51*_____

52*_____ 53*_____ 54*_____

55*_____ 56*_____

Appendix F

**Total Words**

| Training Words | Transfer Words |
|---|---|
| **Day 1** | |
| remove - removed<br>damage - damaging<br>package - packaged | removing<br>damaged<br>packaging |
| **Day 2** | |
| weigh - weighed<br>prepare - preparing<br>refrigerate - refrigerated | weighing<br>prepared<br>refrigerating |
| **Day 3** | |
| cloud - cloudier cloudiest<br>rain - rainy rainiest<br>wind - windy windier<br>snow - snowier snowiest<br>fog - foggy foggier | cloudy<br>rainier<br>windiest<br>snowy<br>foggiest |
| **Day 4** | |
| predict - predicting<br>chew - chewing<br>abandon - abandoned | predicted<br>chewed<br>abandoning |
| **Day 5** | |
| supply - supplying<br>fly - flew<br>buy - bought | supplied<br>flying<br>buying |

# Appendix G - 1

Lesson Plans for Whole Language Only-- Control Group
Page 1 of 2

**Objectives:**
1. To stimulate further developments in the areas of the 4 strands of language (listening, speaking, writing, and reading) in addition to thinking, viewing, and representing by having the students respond in thought and action to stories about rain and clouds. (Students will be directed to spell correctly any words that have been posted during this block of time, just as they would be expected to do so during all other regular classroom time.)
2. To have the students share their efforts with one another as they work and with others when work is completed in order to develop a sense of pride, purpose, and responsibility.
3. To increase their knowledge of weather.

**Materials;** lined and blank paper of different sizes for choice, pencils and crayons, and the following books;

Now I Know Clouds, by Roy Wandelmaier
Weather, by Martha Ryan
We Hate Rain! by James Stevenson

**Time:** Approximately 15-20 minutes during the time spelling strategy instruction is given to the Whole-E.S.S.I. group.

**Place:** Library

**Procedures:**
**Students are encouraged to talk as they work as long as most of the dialogue is about their task.*

Day 1
1. Educational Assistant introduces and reads story, Now I Know Clouds.

2. Students take turns recalling facts from the story. E.A. prints their recollections on chart paper in list form. Names of four types of clouds and their descriptions are elicited if not volunteered along with description of fog.

3. The Whole group reads the chart together (chart kept for Day 2).

4. It is understood that this group returns to class at the end of each session and when the Whole-E.S.S.I. group has completed their spelling work. Upon re-entering the classroom, the Whole group resumes doing the same activities as the Whole-E.S.S.I. group.

# Appendix G - 2



Day 2

1. The students read together the chart list from Day 1 about clouds.

2. The students illustrate fog and the four types of clouds that can be found in the sky. Be sure that the students understand that fog is simply a cloud close to the ground. They label the five clouds and print a brief explanation for each beside the diagrams. The descriptions must demonstrate recall from the current story. Post work in library on walls or on bulletin board.

3. Return to class.

Day 3

1. The E.A. reads pages 30 & 31 from Weather.

2. Brief discussion of what causes thunderclouds, thunder, and lightning.

3. Students draw a simple diagram and label it. Post completed diagrams around library.

4. Return to class.

Day 4

1. Students recall factual causes for thunderclouds, thunder, and lightning.

2. Students will write a fictional story. They imagine that there are other reasons for the existence of clouds, thunder, and lightning. *Briefly* discuss ideas and/or story titles.

3. Students are instructed to share their stories with one or more adults at school and at home.

4. Return to class.

Day 5

1. E.A. reads the book We Hate Rain.

2. Students illustrate their favourite part of the story and print one sentence for it. They may take home to complete and then return the pictures so they may be posted in the hallways.

3. Return to class.

# Appendix H

Cloudy With A Chance of Meatballs, by Judi Barrett

One morning Grandpa was making pancakes. When he was flipping the pancakes, one went flying through the air and landed on Henry. This incident gave Grandpa an idea for a bedtime story.

Across one ocean, over bumpy mountains, across boiling hot deserts, and one small ocean, there lay the tiny town of Chewandswallow. This town was like other towns because it had houses, stores, gardens, schools, and animals. But, this town did not have supermarkets because the weather supplied all the food they could possibly want.

The weather came three times a day, at breakfast, lunch, and dinner. It never rained rain. It rained soup and juice. It never snowed snow. It snowed mashed potatoes and green peas. The wind would sometimes blow in storms of hamburgers.

The people would watch television to hear the food predictions for the next day. They would go outside with their plates, knives, napkins, and glasses ready to eat. The people would refrigerate some of the food in case they got hungry later.

The Sanitation Department removed the leftovers from the streets, lawns, and roofs. They gave the leftovers to the pets or they put some of it into the surrounding oceans for the fish. All the rest was put into the soil to make things grow better.

One day, the weather took a turn for the worse. Once, only cheese fell all day. Another day, there was pea soup fog. No one could see, and food got stuck in the fog. One morning there was a pancake storm with maple syrup that almost flooded the town. A huge pancake landed on the school. Because of its weight, the pancake could not be lifted off so the school had to be closed. The weather got even worse. The tomato tornado made a huge mess. There was so much damage done to the town.

The people of Chewandswallow were so scared. They decided to abandon the town. They made boats out of bread and peanut butter, and sailed away.

They found another town. They liked it, but the people thought it was odd because food had to be bought. It seemed odd to see food in packages, cans, and bottles on shelves. They had to get used to preparing their food.

Grandpa kissed the children goodnight when he finished telling the story. The next morning when they were sledding, they thought they saw a big pat of butter at the top of the hill. They even smelled mashed potatoes.

AS TOLD BY THE HUNGRY CHILDREN OF GRADE 3

Readability: Grade 4.5